



Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR601	Title of the Course	Research Methods	L	T	P	C
Year	I	Semester	I	2	-	-	2
Pre-Requisite	AR502	Co-requisite	Nil				
Course Objectives	To familiarize the students with basic research methodologies, data collection and its analysis						

Course Outcomes	
CO1	Employ qualitative, quantitative, and mixed research methodologies to conduct research in architecture.
CO2	Apply the research process to problems in architectural design and planning.
CO3	Master the literature in students' particular area of interest.
CO4	Design a research study using relevant approaches and methods.
CO5	Critically read, interpret, and evaluate research proposals and publications.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to research methodology	Meaning of Research, Objectives of Research, Types of Research, Research Approaches, Significance of research, Research methods versus Methodology, Research and Scientific method, Research Process, and Criteria of Good Research..	4	1, 2, 3
2	Data collection techniques and ethical considerations	Introduction, Experiments and Surveys, Collection of Primary data: Difference between Questionnaire and Schedule, Guidelines for Constructing Questionnaire/Schedule, Some other Methods of Data Collection. Collection of Secondary data, Selection of Appropriate Method for Data collection	8	4, 5
3	Quantitative research	Research instruments used in the quantitative research, Characteristics of Good Tools, Questionnaire and Interview, Observation., Tests, Scale and Types	8	1, 3, 5
4	Qualitative research	Research instruments used in the qualitative research & Characteristics	8	1, 3, 4
5	Data collection	Modes of data collection, its analysis and presentation	4	1, 3, 4

Reference Books:
'Vernacular Architecture and Regional design'- Cultural process and environmental response- 'Elsevier science and technology'- 30 April 2007 by Heath Kingston
Vernacular Traditions: Contemporary Architecture, The energy resources and institute by Aishwarya Tipnis, 2012
Marcel Vellinga, Taylor and Francis- 'Vernacular architecture in the Twenty first century'- 2006 USA by Lindsay Asquith
e-Learning Source:
https://www.classcentral.com/course/researchmethods-1767
https://onlinecourses.nptel.ac.in/noc22_ge08/preview

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		2		1	3		3	2					3	2	2	3		
CO2	2		2	1		1		2					2	1	1	1		
CO3			3	1	2								3	2	2	2		
CO4	3	3	2	2	1			1					2	1	2	2		
CO5		3		3	2		3	3					3	2	2	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR602	Title of the Course	Sustainable Development	L	T	P	C
Year	I	Semester	I	2	-	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with basic sustainable development and its importance.						

Course Outcomes	
CO1	To understand the concept of Sustainable Development and its relevance in Architecture.
CO2	Importance of recycling and its value and need
CO3	Develop understanding for sustainability and issues related to it.
CO4	Know the need for recycling the waste water and methods involved in treatment of wastewater..
CO5	Importance of conservation and its intervention measures

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to sustainable development	Introduction to sustainable development in relation to natural resource conservation, energy conservation, environmental pollution and conservation of biodiversity.	6	1
2	Global issues	Global issues such as global warming, ozone layer depletion, greenhouse gasses, and depletion of natural resources in relation to energy generation.	8	2
3	Regional and urban planning	Sustainable development from the perspective of regional and urban planning.	6	3
4	Climate considerations in design	Issues at regional and micro level; Climate considerations in design of buildings in various climates.	6	4
5	Eco-friendly architecture	Eco-friendly architecture	6	5

Reference Books:

Design in Architecture - Architecture and Human Science by Broadbent, G.

Learning Basic Design. Mumbai: Rizvi College of Architecture by Chauhan, P.

Design Drawing. Hoboken: John Wiley & Sons. by Ching, F. D. K.

Architect? A Candid Guide to the Profession. Cambridge by Roger, K. L.

Experiencing Architecture. 2nd Rev. Ed. Cambridge: MIT Press by Rasmussen, S.

e-Learning Source:

<https://sdgs.un.org/goals>



<https://www.who.int/health-topics/air-pollution>

<https://www.conserve-energy-future.com/causes-effects-solutions-depletion-natural-resources.php#:~:text=Resource%20depletion%20happens%20when%20the,fishing%2C%20mining%2C%20logging%20etc.>

<https://www.sciencedirect.com/science/article/abs/pii/S0360544220305168>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO6	PSO7
CO1	2	2	3	2	1	2	2	2					2	3	3	2		
CO2	2	2	3	2	2	2	2	2					2	2	3	3		
CO3	3	3	3	3	3	3	3	3					3	3	3	3		
CO4	2	2	1	2	2	2	2	2					2	2	1	2		
CO5	2	3	2	2	1	2	3	2					2	3	3	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR603	Title of the Course	Environmental Design-I	L	T	P	C
Year	I	Semester	I	2	-	5	7
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with environmentally responsive design						

Course Outcomes	
CO1	Theoretically understand design with climate as the basic parameter of design.
CO2	Students will learn a range of environmental, work-related and personal factors when deciding what makes a comfortable workplace temperature.
CO3	Analyze, troubleshoot, and implement solutions with climate as the basic parameter of design.
CO4	Assess and Review the condition of environment based on environment indicators
CO5	Prepare design strategies for different climatic regions

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Environment and Comfort	Global, macro and micro level climate, environmental aspects affecting human comfort	20	1
2	Building Physics	Energy balance of built environment; Thermal Environment; Adaptive model of Thermal Comfort and its application to environmental responsive design of buildings	20	1, 2
3	Case/ Literature Studies	Detailed Analysis of Buildings with respect to its thermal properties, environmental comfort factor	24	3, 4
4	Site Analysis	Study of case in detail	24	2, 4, 5
5	Design Exercise	Design of a multi-use built form - Office, Hotel, Apartment (and similar) taking into consideration the above design and assessment criteria) Suggested Exercise: <ul style="list-style-type: none"> ● Preparation of design schemes including analysis of prototypes ● Formulation of requirements, evolution of design criteria; and development of design for integrated building ● Complexes that address environmental issues 	24	3, 4, 5

Reference Books:

A Design and Environment: An introductory manual by Vyas H. Kumar
 Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings by Arvind Krishan
 Environmental Science and Technology: Building Research Note by Central Building Research Institute
 Climate Design: Solution for buildings that can do more with less technology by Gerhard Hausladen.
 Climate responsive architecture by Arvind Krishnan
 Climate Design: Energy Efficient building principles and practices by Watson Donalt
 Man, Climate and Architecture, B.Givoni 5. Selected Research Papers and Studies

e-Learning Source:

https://www.researchgate.net/publication/43456525_Climate_Responsive_Architecture
<https://press.nid.edu/product/design-and-environment-a-primer/>
<https://globalinch.org/bibliographyauthor/h-kumar-vyas/>
<https://pdfgoes.com/downloads/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO6	PSO7
CO1	3	2	1	2	2	1	3	1					3	3	2	1		
CO2	2	2	1	2	3	2	2	3					2	3	2	2		
CO3	3	2	3	3	2	3	2	3					2	3	3	1		
CO4	3	3	3	1	1	2	1	3					3	2	3	2		
CO5	3	3	3	3	3	3	3	3					3	3	2	1		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR604	Title of the Course	Heritage-I (A)	L	T	P	C
Year	I	Semester	I	2	-	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To Know Importance of Architectural Heritage & its Conservation						

Course Outcomes

CO1	To Know the importance of Architectural Heritage & its Conservation
CO2	Learning of International norms for Architectural Conservation
CO3	Understanding Classification of Monuments at local, national and international levels
CO4	Case Studies in Architectural Conservation
CO5	To make students conversant with the complete process of design: problem identification, formulation of requirement, evolution of a design criteria and preparation of the design proposals.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Importance of Architectural Heritage and its conservation.	4	1
2	Cultural Heritage Resource	Urban heritage; Tangible and Intangible Aspects	6	1
3	Norms For Architectural Conservation	National and International norms for Architectural Conservation and Preservation	8	2
4	Historic Building Materials & Structural Systems	Classification of Monuments at local, national and international levels	8	3
5	Heritage Buildings	Methods of heritage conservation, Case Studies in Architectural Conservation	6	4, 5

Reference Books:

- Conservation of Historic Buildings by M Feilden Bernard
- Heritage Buildings of India: Portfolio compiled from drawings and Sketches ...by Claude Batley
- Monuments of Delhi: Historical Study by R Nath
- World Monuments Watch 100 Most Endangered Sites-2002 by World Monuments

e-Learning Source:

- www.intach.org
- <https://www.india.gov.in/topics/art-culture/heritage>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	-	2	-	1	2	-	3	2					1	2	3	1	
CO2	2	3	3	3	2	-	2	-					1	3	2	1		
CO3	3	2	3	2	-	2	2	-					2	2	3	1		
CO4	3	2	3	3	1	3	2	3					3	3	2	1		
CO5	3	2	2	2	1	1	3	2					3	2	2	2		

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Integral University, Lucknow

Effective from Session: 2019-2020							
Course Code	AR605	Title of the Course	Heritage-I (B)	L	T	P	C
Year	I	Semester	I	-	-	5	5
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To Know Importance of Architectural Heritage & its Conservation						

Course Outcomes	
CO1	To Know the importance of Architectural Heritage & its Conservation.
CO2	Learning of International norms for Architectural Conservation.
CO3	Understanding Classification of Monuments at local, national and international levels.
CO4	Case Studies in Architectural Conservation.
CO5	To make students conversant with the complete process of design: problem identification, formulation of requirement, evolution of a design criteria and preparation of the design proposals.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Selection and analysis of building or contextual area regarding the conservation.	10	1, 2, 3
2	Literature study and site/building analysis	Site study in context of environment, norms, bye laws. Existing condition and analysis of site/building and mapping of issues.	16	1, 2, 3
3	Case studies	Relevant case studies to understand corresponding issues, design intervention and methodologies.	16	4
4	Data analysis and Design Interventions	Conceptual design, policy, methodology and interventions with evidence of logical argument and analysis of available information and issue mapping	16	5
5	Design Proposal	Final design/policy proposal	22	5

Reference Books:

Conservation of Historic Buildings by M Feilden Bernard

Heritage Buildings of India: Portfolio compiled from drawings and Sketches by Claude Batley

Monuments of Delhi: Historical Study by R Nath

World Monuments Watch 100 Most Endangered Sites-2002 by World Monuments

e-Learning Source:

www.intach.org

<https://www.india.gov.in/topics/art-culture/heritage>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	-	2	-	1	2	-	2	2					1	2	3	1		
CO2	2	3	3	3	2	-	1	-					1	3	2	1		
CO3	3	2	3	2	-	2	1	-					2	2	3	1		
CO4	3	2	3	3	1	3	1	3					3	3	2	1		
CO5	3	3	2	3	2	2	2	2					2	3	3	2		

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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR606	Title of the Course	Architectural Education and Practice (A)	L	T	P	C
Year	I	Semester	I	2	-	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with teaching methodologies in architectural education						



Course Outcomes	
CO1	Introduction to the teaching methodologies in architectural education
CO2	Understanding importance of relationship between Architecture Education and Practice
CO3	New trends in Architectural Education
CO4	Knowledge of various tools used in teaching Architecture

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Teaching Methodologies In Architectural Education	Chronological development of Architectural Education, Teaching methodologies in The English (British) system of Architectural Education, German system of Architectural Education and American system of Architectural Education	6	1
2	Elements of Architecture Education	Elements of Architecture Education, Identification of main discipline, Systematic organization of main disciplines into logical groups under Core, Associated and Allied description	6	2
3	Scope of Architecture Education	Interpretation of dynamics of Architecture observed during the studies of their period into the framing of teaching programs for the Architecture Education.	6	2
4	Review of Architecture Education In India	Understanding of the formal level of Architecture Education in India. Making the projection about the needs of the Architecture Education and future Architects to run the country	6	3
5	Practical Teaching	Observing the Classroom/studio teaching in live classes of B.Arch. and assisting teachers in their academic responsibilities relating to B. Arch programme	8	4

Reference Books:	
Narratives of Architectural Education-From Student to Architect: James Thompson	
Designing Better Architecture Education: Global Realities and Local Reforms: Manjari Chakraborty	
Spatial Design Education: New Directions for Pedagogy in Architecture and Beyond: Ashraf M. Salama	
e-Learning Source:	
https://architexturez.net/doc/az-cf-21231	
https://architexturez.net/doc/az-cf-168627	
https://www.arcc-journal.org/index.php/repository/article/download/252/194	
https://www.cambridge.org/core/journals/arq-architectural-research-quarterly/article/made-in-architecture-education-as-collaborative-practice/AA9E1D80014FCD7FCB0FF735E4FC6810	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1				3			2						3	2	2	2		
CO2				3			2						3	2	1	1		
CO3				3			2						2	2	1	2		
CO4				3			2						3	1	1	3		
CO5				3			2						3	2	1	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019-2020							
Course Code	AR607	Title of the Course	Architectural Education and Practice (B)	L	T	P	C
Year	I	Semester	I	-	2	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with the evolving teaching methodologies in architectural education.						



Course Outcomes	
CO1	Acquaintance with the different approaches of educational technology.
CO2	Acquaintance with the new educational technologies
CO3	Acquaintance with the evolving methodologies for teaching Architectural Design.
CO4	Acquaintance with the evolving methodologies for teaching Building Construction and History of Architecture.
CO5	Acquaintance with the evolving methodologies for teaching Services and Structures.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Approaches of Educational Technology in Architectural Education	Different approaches of Educational Technology; Software Approach, Hardware Approach, System Approach and Multimedia Approach	6	1
2	Study of new Educational Technologies	Analytical study of new technologies in Architecture Education with their scope, advantages and limitations: Virtual Reality & Virtual Environments, Digital Studios/classroom, Mobile Applications based Learning, Digital Information Resources	6	2
3	Evolving Methodologies for Subjects Studied and Taught in Architecture-I	Evolving methodologies for subjects studied and taught in Architecture: Architectural Design	8	3
4	Evolving Methodologies for Subjects Studied and Taught in Architecture-II	Evolving methodologies for subjects studied and taught in Architecture: History of Architecture, Building Construction	6	4
5	Evolving Methodologies for Subjects Studied and Taught in Architecture-III	Evolving methodologies for subjects studied and taught in Architecture: Architectural Design, History of Architecture, Construction, Services, Structures	6	5

Reference Books:	
Narratives of Architectural Education-From Student to Architect: James Thompson	
Designing Better Architecture Education: Global Realities and Local Reforms: Manjari Chakraborty	
Spatial Design Education: New Directions for Pedagogy in Architecture and Beyond: Ashraf M. Salama	
e-Learning Source:	
https://www.sciencedirect.com/science/article/pii/S1110016819300511	
https://architexturez.net/doc/az-cf-168627	
https://www.arcc-journal.org/index.php/repository/article/download/252/194	
https://www.cambridge.org/core/journals/arq-architectural-research-quarterly/article/made-in-architecture-education-as-collaborative-practice/AA9E1D80014FCD7FCB0FF735E4FC6810	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1				3			2						3	2	3	2	
CO2				3			2						2	1	2	3		
CO3				3			2						2	2	2	2		
CO4				3			2						3	2	3	3		
CO5				3			2						3	1	3	2		

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR608	Title of the Course	Computer Application	L	T	P	C
Year	I	Semester	I	1	1	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	<ul style="list-style-type: none"> To familiarize the students with basic research methodologies, data collection and its analysis. To enable them to expertise with forms, mapping, rendering and architectural work presentation techniques. 						

Course Outcomes

CO1	Analyzing requirements of architectural offices.
CO2	How to familiarize the students with basic research techniques and practice of Computer Applications in Architecture.
CO3	How to expertise in graphic applications specially 2 Dimensional and 3D Dimensional for fast and attractive presentation of theme and ideas.
CO4	To teach utilization and revisions of architectural computer Application in office uses.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Introduction, History and Scope of Digital Technologies in Architecture	6	1, 2, 3
2	Digital Applications Used in Creating a Built Environment	Applications used from Conception to construction of a built environment at micro and macro level: Presentation: Raster & vector graphics, Colour models, file formats and their usage, presentation techniques in Architectural graphics and Animations.	7	2, 3
3	Visualization as a Tool for Design	Visualization of complex forms, Digital Architecture, Parametric designing, Programming and scripting as tools for design, Designing, Drawing & detailing: Applications used for design processes and considerations.	8	2, 3, 4
4	Softwares in Industry	Softwares used in the AEC industry: CAD CAM & BIM applications, Digital Fabrication & Construction: Applications and fabrication techniques.	7	2, 3, 4
5	Digital Applications Trends	Building automation & Intelligent building concepts Energy modeling applications, Understanding Photoshop, Corel Draw and GIS.	4	3, 4

Reference Books:

Introduction to AutoCAD 2006 A Modern Perspective by Paul Richard

Powerpoint 2000 for Beginners by Alexis Leon

Photoshop 7: Savy by Steve Romaniello

Exploring Microsoft office XP:Maximize your productivity with the newest By John Breeden

e-Learning Source:

<http://www.focusnet.co.uk/cib/library/physdishous94.htm>

<http://www.ourvirtualmall.com/cloth.htm>

<http://www.ddimagazine.com/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	3	3	3	1	1	1	3	3					1	1	3	2	
CO2	2	3	3	2	2	2	3	3					3	3	3	3		
CO3	3	3	3	2	1	2	2	3					2	2	1	1		
CO4	3	3	3	2	2	3	3	3					2	2	3	3		

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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR609	Title of the Course	Psychology as related to teaching methods and learning	L	T	P/S	C
Year	I	Semester	II	2	-	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Creating an understanding of the term Psychology and its use in the profession of Architecture with emphasis on teaching methods and learning						



Course Outcomes	
CO1	To understand the term Psychology and its use in the profession of Architecture
CO2	To understand psychology with emphasis on teaching methods and learning
CO3	To understand the concept, scope of psychology and its organizational setting
CO4	To understand the factors affecting individual and group dynamics, Values at Personal/ National level, Assessment & Evaluation Techniques
CO5	To know about values, Assessment & Evaluation Techniques

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Principles of teaching	Principles of teaching, Psychological/ Sociological foundations, Methodology of teaching/ research	6	1, 2
2	Scope of Psychology	Concepts, methods and scope of Psychology, Motivation, Intelligence and creativity	6	2, 3
3	Personality Development	Attitude and Aptitude, Self and personality, Psychology in organizational setting	6	3, 4, 5
4	Learning Dynamics	Factors affecting individual and group dynamics, Values at Personal/ National level, Assessment & Evaluation Techniques	7	2, 3,4
5	Architecture Psychology	Introduction to the Psychology of Architecture; Meaning and Definition, Development	7	4, 5

Reference Books:	
Introduction to Psychology by Morgan and King	
Psychology for Architects by David V Canter	
e-Learning Source:	
https://www.verywellmind.com/what-is-educational-psychology-2795157#:~:text=Educational%20psychology%20is%20the%20study,influences%20on%20the%20learning%20process.	
https://www.frontiersin.org/articles/10.3389/fpsyg.2021.711489/full	
chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://archive.mu.ac.in/myweb_test/SYBA%20Study%20Material/edu-II%20psycho.pdf	
https://www.psychologydiscussion.net/notes/psychology-notes/educational-psychology-psychology-notes/top-6-methods-of-educational-psychology/2373	
https://research-education-edu.blogspot.com/2008/11/education-psychology-method-of.html	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	3	1	1	2	3	2					2	3	1	2		
CO2	-	3	3	2	-	3	2	2					2	3	1	1		
CO3	3	3	3	3	2	2	1	2					2	3	1	2		
CO4	-	3	3	2	-	3	2	2					3	3	2	3		
CO5	3	3	3	3	2	2	1	2					3	2	2	2		

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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR610	Title of the Course	Resource Management	L	T	P	C
Year	I	Semester	II	2	-	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To study and familiarize with basic management principles in resource planning for sustainable development.						

Course Outcomes

CO1	Identify the scope and classification of the resource management activities and expenditures.
CO2	Understand the importance of resources available and its current condition also the potential and constraint related to it.
CO3	Know the vernacular resource planning and identify the issues and challenges.
CO4	Understand the several ways to conserve the resources available.
CO5	Develop a systematic and methodological approach for resource management.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Definitions of Resources , Characteristics of Resources	6	4
2	Resource Classification	Resource identification and classification, Analytic study of important resources like Land, Water, Energy, Finance and Manpower- there present scenario, constraints and future prospects	6	2
3	Value of Resources	Availability, Utility, Fiscal Value, Industrial Value	8	3
4	Resource Optimization	Key issues and recent trends in resource planning , Conservation and Optimization of major resources	6	1, 2
5	Resource Management	Need for the Management of Resources, Basic Techniques of Resource Management, Systems approach in resource management,	6	1, 2, 3

Reference Books:

- A Design and Environment: An introductory manual by Vyas,H Kumar
- Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings by Arvind Krishan
- Environmental Science and Technology: Building Research Note by Central Building Research Institute
- Climate Design: Solution for buildings that can do more with less technology by Gerhard Hausladen.



e-Learning Source:

- <https://www.globus.org/sites/default/files/gram97.pdf>
- https://www.researchgate.net/publication/3801486_A_distributed_resource_management_architecture_that_supports_advance_reservations_and_co-allocation
- https://www.ripublication.com/ijcer_spl/ijcerv5n4spl_21.pdf
- <https://core.ac.uk/download/pdf/36719077.pdf>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	3	3	3	2	3	3					3	2	3	3		
CO2	2	3	3	2	3	3	3	2					3	3	3	2		
CO3	3	3	2	1	3	3	3	3					3	3	3	3		
CO4	3	2	2	3	3	2	2	3					3	2	2	3		
CO5	3	3	3	3	3	2	2	3					3	2	2	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR611	Title of the Course	Environmental Design – II	L	T	P	C
Year	I	Semester	II	2	-	5	7
Pre-Requisite	AR603	Co-requisite	Nil.				
Course Objectives	<ul style="list-style-type: none"> To expose students to general understanding of the construction sector in India and the best practices in construction technology relating to environmental design. Design of complex buildings incorporating eco-friendly, energy saving and cost-effective materials and technologies. 						

Course Outcomes

CO1	Understanding of the construction sector in India.
CO2	Understanding of new, innovative and sustainable materials.
CO3	Understanding the impact of existing materials and technologies on the environment and the ecosystem.
CO4	Understanding of worldwide trends in the field of eco-friendly materials and technologies and their effectiveness in the Indian context.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	General understanding of the construction sector in India, Best practices in construction technology.	20	1
2	Energy Efficient Materials	Study of new, innovative and energy effective building materials	20	2
3	Case/ Literature Studies	Detailed Analysis of Worldwide trends in the field of eco-friendly materials and technologies and their effectiveness in the Indian context	24	3
4	Site Analysis	Study of case in detail	24	2, 4, 5
5	Design Exercise	Design of complex buildings incorporating eco-friendly, energy saving and cost-effective materials and technologies	24	4

Reference Books:

- Energy efficient buildings in India by Mili Majumdar
- Sol Power by Sophia and Stefen Behling
- Solar energy in Architecture and urban planning by Thomos Herzog
- Climate responsive architecture by Arvind Krishan

e-Learning Source:

- https://www.researchgate.net/publication/347933554_What_is_environmental_design
- https://www.researchgate.net/publication/327043854_origin_and_development_of_environmental_design
- http://www.unicri.eu/news/files/2011-04-01_110414_CRA_Urban_Security_sm.pdf

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	1	1	1				3	1					1	1	1	2		
CO2	2	2	2	1	2		3	2					2	2	2	2		
CO3	2	3	3			3	2	3					2	3	3	1		
CO4	3	3	3	2	2	3	3	3					2	3	3	1		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Khurram Ashraf Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR612	Title of the Course	Heritage -II (A)	L	T	P	C
Year	I	Semester	II	2	-	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To introduce and familiarize the students with the working of conservation systems and practices being followed nationally and internationally.						


Course Outcomes	
CO1	To understand the various techniques being followed globally.
CO2	To make students understand the national and international conservation laws.
CO3	To make students understand the financial feasibility of conservation projects.
CO4	To analyze the statistical application of data required for conservation projects.
CO5	to understand the ethics and duties of conservation architects.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Global Conservation Techniques	Familiarization with various conservation techniques being followed globally	7	1
2	Conservation Laws	Introduction to National and International Conservation laws, Familiarization with the working of Archeological Survey of India, Creating an in-depth understanding about the rehabilitation of the historical building	7	2
3	Economics of Conservation	Introduction to the economics of conservation	6	3
4	Research and Documentation	Introduction to research, analysis and recording as related to conservation.	6	4
5	Conservation Ethics	Introduction to the principles of conservation of historical gardens, Understanding the duties and works of a Conservation Architect Project formulation techniques for major Conservation Projects	6	4, 5

Reference Books:
Guidelines for conservation –a technical manual by Feilden, Bernard,
Conservation of historical buildings by Feilden, Bernard,
Rearchitecture- old buildings/ new uses by Sherban Centacuzino
Journal of architectural conservation (UK)
e-Learning Source:
https://www.gutenberg.org/ebooks/66794
https://www.publicationsdivision.nic.in/index.php?route=product/product&product_id=2561

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	3	1	2	1	1	2	3						1	1	2	3		
CO2	1	3	2	1	3	2	1						3	3	2	1		
CO3	1	2	2	3	3	1	1						2	3	1	1		
CO4	2	2	3	2	2	2	1						2	2	2	2		
CO5	2	2	1	2	2	1	1						2	2	1	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR613	Title of the Course	Heritage II (B)	L	T	P	C
Year	I	Semester	II	-	-	5	5
Pre-Requisite	AR605	Co-requisite	AR612				
Course Objectives	To impart practical understanding of conservation works						

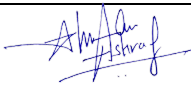
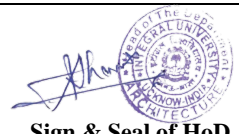
Course Outcomes	
CO1	Employ qualitative, quantitative, and mixed research methodologies to conduct research in architecture.
CO2	Apply the research process to problems in architectural design and planning.
CO3	Master the literature in students' particular area of interest.
CO4	Design a research study using relevant approaches and methods.
CO5	Critically read, interpret, and evaluate research proposals and publications.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	National Heritage Sites	Detailed study of heritage sites of national importance.	14	2, 3, 4
2	International Heritage sites	Detailed study of heritage sites of international importance.	14	2, 3, 4
3	Case Studies national monuments	Case studies relating to conservation and rehabilitation of Indian monuments.	17	3, 4, 5
4	Case studies international monuments	Case studies relating to conservation and rehabilitation of international monuments.	17	3, 4, 5
5	Documentation	Preparation of detailed project report pertaining to conservation of a monument listed by ASI.	18	1, 2, 3, 4, 5

Reference Books:	
	Guidelines for conservation –a technical manual by Feilden, Bernard
	Conservation of historical buildings by Feilden, Bernard
	Re Architecture- old buildings/ new uses by Sherban Centacuzino
	Journal of architectural conservation (UK)
	Conservation in the Tropics by O. P. Agarwal
	Champaner- pavagadh cultural sanctuary, Gujarat, India – University of Illinois at Urbana
	Journal of architectural conservation (UK)
e-Learning Source:	
	https://www.tandfonline.com/toc/uarc20/current
	https://www.tandfonline.com/action/journalInformation?show=aimsScope&journalCode=uarc20
	https://www.researchgate.net/publication/315445786_Champaner-Pavagadh_Cultural_Sanctuary_Gujarat_India
	https://issuu.com/amitasinha/docs/champaner-pavagah

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO6	PSO7
CO1	3	2	1	2	3	2	1	2					2	2	2	3		
CO2	2	3	3	2	2	2	2	2					2	2	1	3		
CO3	2	2	2	3	2	3	2	2					1	2	2	3		
CO4	1	3	2	3	2	2	2	3					2	3	2	3		
CO5	3	2	1	2	1	1	1	1					2	2	1	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019-2020							
Course Code	AR614	Title of the Course	Seminar: Contemporary Trends from Magazines and Journals (A)	L	T	P	C
Year	I	Semester	II	2			2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To impart thorough knowledge with the help of seminars and joint discussion about Contemporary trends in architecture in India and abroad.						

Course Outcomes	
CO1	To develop clear- cut understanding of contemporary design
CO2	To Understand the building type, style and architectural technologies
CO3	To understand contemporary trends in building materials and techniques
CO4	To know qualitative assessment of modernistic architecture
CO5	Know the development in the modern period with emphasis on the underlying parameters, philosophy, intentions and expressions of associated periods/ movements as a response to the context of time, location and aspirations

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Contemporary design thinking	Developing clear- cut understanding of contemporary design thinking and methods	4	1,2
2	Architectural technologies	Developing clear- cut understanding of architectural technologies	8	2,3
3	Contemporary techniques	Contemporary trends in building materials and techniques	8	2,3
4	Modernistic architecture	Qualitative assessment of modernistic architecture	6	4
5	Analytical study of contemporary architects	Analytic study of important works of contemporary Indian Architects like B.V.Doshi, Charles Correa, A.P. Kanvinde, Raj Rewal etc.	6	5

Reference Books:



Contemporary Indian architects- After the Masters by Vikram Bhatt & Peter Scriver
 Lauri Baker by Gautam Bhatia
 The complete architecture of Bal Krishna Doshi by James Steele
 Rajrewal by brian Brace Taylor
 Doing Your Research Project by Judith Bell
 Architectural Research Methods by Groat, Linda and David Wang.,
 Visual Research Methods in Design. by Sanoff, H. (1991).,
 Technical Communications – Principles and Practices by Raman Meenakshi and Sharma Sangeeta,
 A manual for Writers of Research Papers, Theses and Dissertation by Kate L.Tourabian,

e-Learning Source:

Research Methodology: <https://archive.nptel.ac.in/courses/127/106/127106227/>
 Qualitative Research Methods & Research Writing: <https://archive.nptel.ac.in/courses/127/105/109105115/>
 Methodology of Design Research: <https://archive.nptel.ac.in/courses/107/108/107108011/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	POs												PSOs					
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO2	PSO3	PSO4	PSO5	PSO 6
CO1	-	2	3	3	-	3	3	2					3	3	1	1		
CO2	1	1	3	2	1	-	2	3					3	2	3	2		
CO3	-	3	3	3	1	-	2	3					3	3	3	2		
CO4	-	2	2	1	3	-		3					2	2	2	3		
CO5	-	1	2	3	-	2	3	3					3	1	3	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR615	Title of the Course	Seminar: Contemporary Trends from Magazines and Journals (B)	L	T	P	C
Year	I	Semester	II	-	2	-	2
Pre-Requisite	AR614	Co-requisite	Nil				
Course Objectives	To developing understanding of contemporary design thinking and methods.						

Course Outcomes

CO1	To develop clear understanding of contemporary design.
CO2	To analyze important works of contemporary Indian Architects.
CO3	To analyze important works of contemporary International Architects.
CO4	To review latest construction technologies.
CO5	Students will learn documentation and report writing

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Contemporary Design Thinking	Developing clear- cut understanding of contemporary design thinking and methods, developing clear- cut understanding of architectural technologies, Contemporary trends in building materials and techniques.	6	1
2	Renowned Indian Architects	Analytic study of important works of contemporary Indian Architects like B.V.Doshi, Charles Correa, A.P. Kanvinde, Raj Rewal, etc.	5	2
3	Renowned International Architects	Analytic study of important works of contemporary International Architects like Le Corbusier.	8	3
4	Construction Technologies	Review of latest construction technologies being pursued at national and international level.	8	4
5	Seminar Report	Documentation and report writing	5	5

Reference Books:

Architecture in the twentieth century by Peter Gossel and Gabriele

Frank Lloyd Wright by Robert Mc Carter

International Architecture - Year book: 8

Building services journal (UK)

Architectural Research (UK)

e-Learning Source:



<https://whc.unesco.org/en/list/1321/#:~:text=These%20include%20the%20Villa%20Savoye,the%20Cabanon%20de%20Le%20Corbusier>

<https://www.re-thinkingthefuture.com/top-architects/a271-15-works-of-b-v-doshi-every-architect-should-visit/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO- PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	1	3	3	2	1	2	2	3					3	1	2	2	
CO2	1	2	2	1	1	3	2	2					3	1	2	2		
CO3	2	2	2	2	1	3	2	1					3	1	3	2		
CO4	1	3	3	1	2	3	2	2					3	1	3	2		
CO5	3	3	2	1	1	3	2	3					3	1	3	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR616	Title of the Course	Philosophy	L	T	P/S	C
Year	I	Semester	II	1	1	-	2
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Creating an understanding of the term Philosophy and its specific use in Architecture profession.						

Course Outcomes	
CO1	To create an understanding of the term Philosophy
CO2	To understand the role of Philosophy and its specific use in Architecture profession
CO3	To know the ideologies of prominent philosophers
CO4	To understand the ethics required in architecture and planning
CO5	To know the concept and issues in environmental philosophy and design

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction	Origin and meaning of the term- philosophy, Philosophy- Nature and scope, Branches of philosophy, Theory of knowledge and Theory of Reality (Epistemology and metaphysics)	6	1, 2
2	Realism and Idealism	Introduction to Realism- Theories of Indian, Western & Greek Philosophy	6	2, 3
3	World Famed Philosophers	Ideologies of world famed Philosophers like Aristotle, Plato and Socrates	6	3, 4, 5
4	Ethics and Logics	Introduction to Ethics and logic, use of logic in designing and planning, Aesthetics and Ethics	7	2, 3, 4
5	Design and Environmental Philosophy	Concepts and issues in environmental philosophy, Creating an understanding of design philosophy	7	4, 5

Reference Books:


- An Introduction to Philosophy By Patric
- Introduction to Indian Philosophy By Dutta and Chatterjee
- Philosophy and Architecture By Michael H. Mitias

e-Learning Source:

- <https://nptel.ac.in/courses/107104078>
- <https://archive.nptel.ac.in/courses/107/104/107104078/>
- <https://nptel.ac.in/courses/124107004>

PO- PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	3	1	1	2	3	2					2	3	1	2		
CO2	2	3	3	1	1	3	2	2					2	3	2	2		
CO3	-	3	3	2	-	3	2	2					2	3	1	2		
CO4	3	3	3	3	2	2	1	2					2	3	1	2		
CO5	3	3	3	3	2	2	1	2					3	2	2	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR701	Title of the Course	Architectural Design Stage – I (Urban Design)	L	T	P/S	C
Year	II	Semester	III	1	-	4	5
Pre-Requisite	AR601	Co-requisite	AR702, AR703				
Course Objectives	<ul style="list-style-type: none"> Creating an understanding of the term Psychology and its use in the profession of Architecture with emphasis on teaching methods and learning. The objective of this exercise is to develop personal attitudes, values and interdependencies of mind with a professional approach to the design process. 						

Course Outcomes	
CO1	Students are to be exposed to the complexities of large-scale architectural projects, often involving a group of buildings in a public realm and having multiple stakeholders
CO2	Students are encouraged to look beyond the concerns of individual building projects to address the interface between public and private realm; and also contextualize their design interventions to the surrounding urban environs.
CO3	To understand the correlation between, physical, socio-cultural, environmental and socioeconomic dimensions of the built environments, so as to identify opportunities and constraints associated with large-scale urban interventions
CO4	To carry out site analysis and site planning at a real-life location, considering its location context, physical features, views, orientation, volumetric analysis and figure ground study of the built-form characteristics, visual imageries, street-scape and skyline analysis; pedestrian, vehicular circulation pattern, and utility networks.
CO5	To apply understanding to a realistic site to create physical environments through basic tools of master planning, such as: movement networks, open spaces, suggestive built form, infrastructure network and planning norms.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Stage-1	<p>Suggested major design exercises are in high-tech architecture/ urban design; housing estates of vast magnitude; large industrial buildings; national and international level educational institutions like IIT's and IIM's, restoration of heritage sites of national and international importance, major transport complexes like airport terminals, railway stations, freight complexes, redevelopment of commercial areas, waterfront development, transit-hubs, market squares, densification along transit corridors, mixed use complexes.</p> <p>Site analysis and site planning at a real-life location, considering its locational context, physical features, views, orientation, volumetric analysis and figure ground study of the built-form characteristics, visual imageries, street-scape and skyline analysis; pedestrian, vehicular circulation pattern, and utility networks.</p> <p>Correlation between, physical, socio-cultural, environmental and socioeconomic dimensions of the built environments, so as to identify opportunities and constraints associated with large-scale urban interventions.</p> <p>Creation of physical environments through basic tools of master planning, such as: movement networks, open spaces, suggestive built form, infrastructure network and planning norms.</p>	25	1, 2
2	Stage-2	After studying and analyzing various issues related to urban design matrices, preliminary design concepts for the assigned project/s are to be worked out at this stage.	25	2, 3
3	Stage-3	<p>Time Bound Exercise: Data collection and its analysis, impact of Climatic conditions and socio-economic factors, formulation of user requirements, philosophy-based concept development and final design (Plans, elevations, Sections, views, 3-Dimensional physical model, perspectives etc.).</p> <p>Library study, Prototype case-studies, anthropometrics and standards.</p> <p>Analyzing the existing environment and its surrounding in specific urban context of architecture character, heritage/historical value, transportation, services and socioeconomic factors.</p> <p>Zoning, 3-D massing, road networks, landscape, services, social facilities etc.</p>	30	4, 5

Reference Books:

Architecture Form, Space and Order by Francis D.K.Ching

Design Fundamentals by R Scott
Architects Hand Book and Planning by E&OE
Form, Line to Design by Scott Van Dyke
Architectural theory by Biermann Veronica Architecture Style Structure and Design by Foster, Michael The Urban Pattern-City Planning & design by Arthur B. Gallion, Simon Eisher Town Design by Fredrick Gibberd The City Shaped: Urban patterns and meanings through history City transformed: Urban Architecture at the beginning of the 21st. Centaury
e-Learning Source:
https://www.udg.org.uk/about/what-is-urban-design
https://uccrn.ei.columbia.edu/sites/default/files/content/pubs/ARC3.2-PDF-Chapter-5-Urban-Planning-and-Design-wecompress.com_.pdf
https://en.wikipedia.org/wiki/Urban_design
https://www.icevirtuallibrary.com/toc/jurdp/current

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	-	3	1	2	3	2	2					3	3	2	2		
CO2	3	3	3	1	-	2	3	2					3	2	3	1		
CO3	2	3	3	1	1	2	3	2					2	3	2	2		
CO4	-	3	3	2	-	3	2	2					3	3	2	3		
CO5	3	3	3	3	2	2	1	2					3	2	2	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR702	Title of the Course	Architectural Design Stage – II (Landscape Design)	L	T	P/S	C
Year	II	Semester	III	1	-	5	6
Pre-Requisite	AR611	Co-requisite	AR701, AR703				
Course Objectives	<ul style="list-style-type: none"> ● Creating an understanding of the term Psychology and its use in the profession of Architecture with emphasis on teaching methods and learning. ● The objective of this exercise is to develop personal attitudes, values and interdependencies of mind with a professional approach to the design process. 						

Course Outcomes	
CO1	To understand the design of landscape in urban context, phasing and development and the site planning: organization, scale, hierarchy, orientation and climate.
CO2	Understanding of Human Psychology and its use in the designing the different open spaces.
CO3	Understanding the relationship of indoor and outdoor spaces with a given environment.
CO4	Implication of knowledge of landscape design fundamentals and parameters to develop better design solutions.
CO5	Developing appropriate graphic skills and presentation techniques to explain the contents of a landscape design.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Stage-1	Exercise could be any medium to large scale project in the public domain, situated within an existing urban fabric, such as: redevelopment of public park, waterfront development, open spaces of market squares, commercial building and mixed use complexes. Site analysis and site planning at a real life location, considering its locational context, physical features, views, orientation, volumetric analysis and figure ground study of the built and open spaces, hard and softscape, visual imageries, street-scape and skyline analysis; pedestrian, vehicular circulation pattern, and utility networks.	30	1, 2
2	Stage-2	Data collection and its analysis, impact of Climatic conditions and socio-economic factors, formulation of user requirements, philosophy based concept development and final design. Library study, Prototype case-studies, anthropometrics and standards.	30	2, 3
3	Stage-3	Analyzing the existing environment and its surrounding in specific urban context of architecture character, heritage/historical value, transportation, services and socioeconomic factors. Zoning, 3-D massing, road networks and all landscape design details etc.	36	4, 5

Reference Books:

Architectural Theory by Biermann Veronica

Architecture Style Structure and Design by Foster, Michael

The Urban Pattern-City Planning & design by Arthur B. Gallion, Simon Fisher Town Design by Fredrick Gibberd

The City Shaped: Urban Patterns and Meanings through History

City transformed: Urban Architecture at the beginning of the 21st. Century



e-Learning Source:

<https://www.udg.org.uk/about/what-is-urban-design>

https://uccrn.ei.columbia.edu/sites/default/files/content/pubs/ARC3.2-PDF-Chapter-5-Urban-Planning-and-Design-wecompress.com_.pdf

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	-	3	1	2	3	2	2					3	3	2	2		
CO2	3	3	3	1	-	2	3	2					3	2	3	1		
CO3	2	3	3	1	1	2	3	2					2	3	2	2		
CO4	-	3	3	2	-	3	2	2					3	3	2	3		
CO5	3	3	3	3	2	2	1	2					3	2	2	2		

Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR703	Title of the Course	Architectural Design Stage – III (Development & Planning)	L	T	P	C
Year	II	Semester	III	1	-	6	7
Pre-Requisite	AR611	Co-requisite	AR701, AR703				
Course Objectives	<ul style="list-style-type: none"> • Creating an understanding of the term Psychology and its use in the profession of Architecture with emphasis on teaching methods and learning. • The objective of this exercise is to develop personal attitudes, values and interdependencies of mind with professional approach to the design process. 						

Course Outcomes

CO1	To understand the basic design concepts so far developed and dovetailed with the landscape design process and to give shape by comprehensively incorporating the development and planning process at this stage.
CO2	Students will learn to decide the bulk of the design decisions, so design information will be framed to satisfy any Planning Permit application requirements.
CO3	Students will learn to understand Human Psychology and its use in dealing with the planning process.
CO4	Students will learn to set up the project for the next stage.
CO5	Developing appropriate software skills and presentation techniques to explain the contents of a design and development stage.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Stage-1	Exercise could be in high-tech architecture/ urban design; housing estates of vast magnitude; large industrial buildings; national and international level educational institutions like IIT's and IIM's, restoration of heritage sites of national and international importance, major transport complexes like airport terminals, railway stations, freight complexes etc.	32	1, 2
1	Stage-2	To select materials including interior finishes and products such as windows, doors, fixtures, appliances, and materials, revise the initial drawings based on the client's comments from the first two design phases, capturing more specifics and details with these freshly revised sketches.	40	2, 3
2	Stage-3	At the end of Design Development, a good deal of product selection and systems design should be progressing to proceed to the next stage, that is, construction development.	40	4, 5

Reference Books:

- The City in History: Its Origins, Its Transformations, and Its Prospects by Lewis Mumford (1972)
- Where We Want to Live: Reclaiming Infrastructure for a New Generation of Cities by Ryan Gravel (2016)
- Design of Cities by Edmund D. Bacon (1967)

e-Learning Source:

- <https://www.imperial.ac.uk/estates-projects/project-procedures/processes/design-management/prepare-stage-3-report/>
- <https://gillilandcm.com/2019/04/30/the-design-development-phase/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	3	2	3	1	3	3	2	2					3	3	3	3	
CO2	2	3	3	1	1	2	3	2					2	3	2	2		
CO3	2	3	3	1	2	2	3	2					3	2	2	2		
CO4	1	3	3	2	2	3	1	2					3	3	3	1		
CO5	3	3	3	3	2	2	2	2					2	3	2	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Khurram Ashraf Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR704	Title of the Course	Seminar: Dissertation Topics	L	T	P	C
Year	II	Semester	III	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	Understanding aspects of Architectural Research						

Course Outcomes	
CO1	Definitions & understanding of terminologies, concepts, and theory in their field and know how to use them.
CO2	Investigate current research and establish research gaps.
CO3	Identify and practice research ethics and responsible conduct in research.
CO4	Identify and demonstrate appropriate research methodologies, know when to use them and apply problem solving skills to constructively address research setbacks.
CO5	Establish final outcome of Research in context of Academics, Industry & Social Reform.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Course Introduction	This course comprises an individual research inquiry into a topic or theme or theory within the discipline of architecture. The dissertation research culmination needs to display an adept fluency in period and contemporary literature and debates about the topic, evidence of a logical argument and analysis of available information or test results, an appreciation and use of a research methodology including its assumptions and validity, and the presentation of this research work in a robust discussion paper or through an exhibition with catalog.	21	1, 3
2	Requirements	Students will be required to undertake some sort of a research into a particular topic, leading to the presentation of a seminar paper, and submission of a final report/essay of approximately 5,000 words In the scheme of dissertation, the dissertation module consists of work done by the student independently, and culminates in the completion of the 5,000-word piece of work. Initially, students discuss possible dissertation topics with the course coordinator, and are given initial guidance in the planning and timing of dissertation writing. The student will then select a topic and draw up a central question or set of questions), compile of a list of likely sources, define the parameters of his/her research, write an outline structure of the project, then proceed to structuring and drafting chapters, receive feedback on these, resubmit work for final scrutiny, and then proceed to the final presentation of the dissertation.	23	2
3	Working Process	In the scheme of dissertation, the dissertation module consists of work done by the student independently, and culminates in the completion of the 5,000-word piece of work. Initially, students discuss possible dissertation topics with the course coordinator, and are given initial guidance in the planning and timing of dissertation writing. The student will then select a topic and draw up a central question or set of questions), compile of a list of likely sources, define the parameters of his/her research, write an outline structure of the project, then proceed to structuring and drafting chapters, receive feedback on these, resubmit work for final scrutiny, and then proceed to the final presentation of the dissertation.	20	1, 3

Reference Books:

Research Methodology by C.R.Kothari; New Age International (P) Ltd

Research Methodology by D. K. Bhattacharya; Excel Books

Research Design: Qualitative, Quantitative and Mixed Methods Approaches

Qualitative Data Analysis : A User Friendly Guide for Social Scientists by Dey, I, 1993, London: Routledge



e-Learning Source:

https://repositories.tdl.org/ttu-ir/bitstream/handle/2346/45399/Ahmed_Alenezi_Diss_Final_May2012%20.pdf?sequence=4

<http://digital.library.unt.edu/ark:/67531>.

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	1	1	1	3	1					1	3	2	2		
CO2	2	3	3	2	2	2	3	1					1	2	2	3		
CO3	1	2	3	2	1	3	2	2					3	1	1	1		
CO4	2	3	2	3	1	2	1	2					3	1	2	2		
CO5	3	2	3	3	3	2	2	3					2	3	3	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 201 - 2020

Course Code	AR705	Title of the Course	Urban Housing	L	T	P	C
Year	II	Semester	III	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To bring among students an appreciation of problems of familiarizing the students with Housing realities facing the Country.						

Course Outcomes

CO1	To enable the students to understand the fundamentals of housing needs, housing finance, and housing techniques in relation to social and environmental effects.
CO2	To understand strategies adopted in Mass Housing projects of various natures and issues related to design considerations.
CO3	To understand the housing, urban policy and land records, and evolution of Land in India.
CO4	To identify the problems and issues of urban Housing in India.
CO5	To understand the correlation between architecture & housing sector.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Urban Housing	Significance of Urban Housing Studies Housing and Urbanization; Impediments to progress of housing in developing countries;	15	1, 2
2	Urban Housing	Projections in Housing; Economics of Housing; The concept of Land cost and value in housing; slums and their characteristics	9	3, 4, 5
3	Indian Housing Scenario	Housing rents and subsidies; Public Policy trends in Low-income settlements; National and state housing policies and their implementation status; Model apartment Act and its implications	15	3, 4
4	Housing Management and Finance	Housing cooperatives and their role in solving the housing problem in India; Role of Institutional Finance in Urban Housing;	15	1, 4, 5
5	Public-Private Partnership	An Introduction to Public-Private Partnership	10	2, 5

Reference Books:

Townhouses and Condominium by Elizabeth Kendall

Contemporary Indian Architecture-Housing & Urban Development by M N Jolekar & S K Das Apartments,

Physical form: Proceedings of seminar: Architectural transformations in the Islamic World held in Jakarta- March 1979

e-Learning Source:

<https://www.india.gov.in/topics/housing/urban-housing>



<https://data.gov.in/keywords/urban-housing>

<https://www.hudco.org/Site/FormTemplete/frmTemp1PLargeTC1C.aspx?MnId>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	1	1	2	1	1	1	2					1	2	1	1	
CO2	2	0	0	2	1	1	2	2					0	2	1	1		
CO3	1	0	0	3	2	2	1	2					0	3	2	2		
CO4	1	1	2	0	0	2	2	3					2	0	0	2		
CO5	1	2	2	1	2	1	1	3					2	1	2	1		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR706	Title of the Course	Advanced Landscape	L	T	P	C
Year	II	Semester	III	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with the subject of Applied Landscape and with best practices being followed nationally and internationally.						


Course Outcomes	
CO1	Students will come to know about the advanced landscapes.
CO2	Students will come to know about public spaces design.
CO3	Students will start analyzing site planning and land forming.
CO4	Students will learn the works of notable architects in landscape design.
CO5	Developing appropriate graphic skills and presentation techniques to explain the contents of a landscape design.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction To Advance Landscape Practices	Familiarization with best national and international practices to be followed in large scale landscape projects in urban and regional context.	16	1
2	Conservation And Management	Introduction to conservation and management of natural resources and environment, creating an understanding of various causes and processes of desertification in hot and dry regions and remedial measures.	16	2, 3
3	Wetlands	Introduction to wetland ecology and management.	12	3
4	Heritage Zone And Landscape	Creating an understanding of landscape practices for heritage zones-natural and man-made.	10	4
5	Case Studies	Onsite studies of important landscape projects in India.	10	5

Reference Books:	
Housing and Urbanization by Charles Correa	
Contemporary Indian Architecture-Housing & Urban Development by M N Jolekar & S K Das	
Apartments, Townhouses and Condominium by Elizabeth Kendall	
Housing, Climate and Comfort by Martin Evans Financing Urban Development in India by K S R Sarma	
Housing Process and Physical form: Proceedings of seminar: Architectural transformations in the Islamic World held in Jakarta- March 1979	
e-Learning Source:	
http://www.gardenvisit.com/landscape_architecture/landscape_debate/definition_eid	
http://agritech.tnau.ac.in/horticulture/horti_Landscaping_types%20of%20garden.html	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO6	PSO7
	CO1	3	1	1	1	3	-	3	3					1	2	2	3	
CO2	2	2	2	3	3	2	2	3					1	3	3	2		
CO3	3	-	2	3	2	1	2	1					2	2	1	3		
CO4	3	1	2	1	3	1	1	3					2	2	3	3		
CO5	3	3	3	1	3	1	-	3					1	3	3	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR707	Title of the Course	Urban Planning & Design	L	T	P	C
Year	II	Semester	III	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with the subject of Urban Planning and Design and with best practices being followed nationally and internationally.						

Course Outcomes	
CO1	To enable the students to understand the fundamentals of urban planning & design.
CO2	To understand strategies adopted in zonal or development.
CO3	To understand the role of infrastructure in urban planning.
CO4	To make students understand the principles and techniques of urban design.
CO5	To understand the development trends strategies.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction to Urban Planning and Urban Design	General understanding of contemporary trends in urban planning and urban design; Urbanization and its impact on the national economy; 74 th Constitutional Amendment Act- 1992	15	1
2	The Planning Process	The Planning Process (perspective, zonal, and development plans); Urban plan implementation	9	2
3	Introduction to Infrastructure Planning	Infrastructure planning of metropolitan cities, and large urban agglomerations;	15	3
4	Urban Design	Urban design principles and techniques	10	4
5	Urban Development Trends	Familiarization with urban development trends in India and Abroad; Determination of urban form; Aesthetic legislation	15	5

Reference Books:	
The Urban Pattern-City Planning & design by Arthur B. Gallion, Simon Eisher	
Town Design by Fredrick Gibberd	
The City Shaped: Urban Patterns and meanings through history by Kostof, Spiro	
Urban Planning in the Third World by Madhu Sarin	
Urban Economic Development in India by V. V. Subramaniam and R. L. Bhatia	
e-Learning Source:	
The Urban Design Handbook; Techniques and Working models by Gindroz, Ray	
https://www.uobabylon.edu.iq/sustainability/files/Sustainable%20Urban%20Planning.pdf	
https://mohua.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%20I(2).pdf	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
	CO1	1	3	3	3	3	1	3	1					3	3	3	1	
CO2	1	1	2	1	2	2	3	1					2	1	2	2		
CO3	1	2	3	1	1	1	3	1					3	1	1	1		
CO4	2	2	3	2	1	2	3	1					3	2	1	2		
CO5	1	2	3	2	5	1	3	1					3	2	5	1		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

<p>Ar. Khurram Ashraf Name & Sign of Program Coordinator</p>	<p>Sign & Seal of HoD</p>
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR708	Title of the Course	Thesis: Written/ Project Work stage I	L	T	P	C
Year	II	Semester	IV	1	-	10	11
Pre-Requisite	Nil	Co-requisite	AR709				
Course Objectives	Architectural Research						

Course Outcomes	
CO1	Definitions & understanding of terminologies, concepts, and theory in their field and know how to use them.
CO2	Investigate current research and establish research gaps.
CO3	Identify and practice research ethics and responsible conduct in research.
CO4	Identify and demonstrate appropriate research methodologies, know when to use them and apply problem solving skills to constructively address research setbacks.
CO5	Establish final outcome of Research in context of Academics, Industry & Social Reform.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Nature of a Master's Thesis:	An M.Arch. thesis (from Greek θέσις, position) is supposed to be an intellectual proposition in the discipline of architecture - submitted as the final culmination for the award of the Master's degree. It differs from a routine dissertation since the basic source material of a thesis, at the postgraduate level, is the primary data collected, analyzed and projected for drawing conclusions and inferences. Drawing of such conclusions and inferences from the primary data is the main idea of research, and provides the framework for a substantial, independent research.	58	1, 3
2	Subject Areas:	A Master's level thesis in the discipline of architecture can be in areas encompassing history, theory, technology, education, and environment or professional practice. Purely design topics, as thesis, shall be acceptable provided they contribute substantive new knowledge to planning of selected constructs. Suggested subject areas for a thesis may consist of analytical studies of projects, environs, prototypes, planning schemes, housing layouts and areas of new technology.	58	2
3	Scope and Methodology:	The course allows candidates to activate research design, planning and methods skills acquired during the first three semesters of the M.Arch course-delivered research programs. For a M.Arch. thesis at least one academic member of the staff will be dedicated to supervise the candidate in this process for which additional academic or other experts may be drawn upon as advisors to support the candidate.	60	1, 3

Reference Books:

Research Methodology by C.R.Kothari; New Age International (P) Ltd

Research Methodology by D. K. Bhattacharya; Excel Books

Research Design: Qualitative, Quantitative and Mixed Methods Approaches

Qualitative Data Analysis : A User Friendly Guide for Social Scientists by Dey, I, 1993, London: Routledge

e-Learning Source:



https://repositories.tdl.org/ttu-ir/bitstream/handle/2346/45399/Ahmed_Alenezi_Diss_Final_May2012%20.pdf?sequence=4

<http://digital.library.unt.edu/ark:/67531>.

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	1	1	1	3	1					1	3	2	2		
CO2	2	3	3	2	2	2	3	1					1	2	2	3		
CO3	1	2	3	2	1	3	2	2					3	1	1	1		
CO4	2	3	2	3	1	2	1	2					3	1	2	2		
CO5	3	2	3	3	3	2	2	3					2	3	3	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR709	Title of the Course	Thesis: Written/ Project Work stage 1	L	T	P	C
Year	II	Semester	IV	1	-	7	8
Pre-Requisite	Nil	Co-requisite	AR708				
Course Objectives	<ul style="list-style-type: none"> ● To take up and promote handling of independent research projects in the discipline of architecture. ● To enable a student to exhibit his/her mastery over collection, analysis and presentation of the source material influencing his/her research. ● Enhancement of a student's ability to present the research in effectively organized and well written form 						

Course Outcomes

CO1	Establish final outcome of Research in context of Academics, Industry & Social Reform
CO2	Analyze the outcome of site study and case studies.
CO3	Identifying the Issues.
CO4	Proposing the new solutions for the issues.
CO5	Creating strategy and making action plan for solutiona\s.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
3	Scope and Methodology:	The course allows candidates to activate research design, planning and methods skills acquired during the first three semesters of the M.Arch course-delivered research programs. For a M.Arch. the thesis at least one academic member of the staff will be dedicated to supervise the candidate in this process for which additional academic or other experts may be drawn upon as advisors to support the candidate.	42	1
4	Thesis contents and submission format:	Completed thesis reports are acceptable only in the prescribed format, which shall be so designed to be suitable for publication and other print media. The typical contents of a thesis will have a title page, an abstract, a table of contents and a bibliography. Other contents shall include an introduction, materials and methods, results, discussion, acknowledgements, indices and appendices, glossaries, list of tables, images or figures, list of abbreviations, and so on. In addition, it shall be mandatory for students to prepare a written abstract of the thesis for publication in the Dissertation abstracts. In addition to the hard copies of the Thesis Report and Abstract, it is mandatory for the candidates to submit their soft copies. There are strict requirements for submission of a thesis, including pagination, layout, type and color of paper, order of components, and citation style as circulated from year to year.	42	2, 3, 4
3	Thesis Jury:	Thesis Jury: A student's defense to his/her thesis shall be evaluated through a jury consisting of the following: Dean – Architecture/ HoD – Architecture M.Arch. Coordinator A reputed architect from the profession An outside academician Thesis Supervisor	44	4, 5

Reference Books:

Research Methodology; C.R.Kothari; New Age International (P) Ltd

Research Methodology; D. K. Bhattachary; Excel Books

Research Design: Qualitative, quantitative and mixed methods approaches

Qualitative Data Analysis : A User Friendly Guide for Social Scientists, By Dey, I, 1993, London: Routledge



e-Learning Source:

https://repositories.tdl.org/ttu-ir/bitstream/handle/2346/45399/Ahmed_Alenezi_Diss_Final_May2012%20.pdf?sequence=4

<http://digital.library.unt.edu/ark:/67531>.

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	2	2	3	3	3	2					1	3	2	3		
CO2	2	2	1	2	2	2	3	3					1	2	2	3		
CO3	2	2	2	2	2	3	2	2					1	1	1	2		
CO4	2	1	2	2	2	2	3	2					2	2	2	3		
CO5	3	2	1	1	3	2	2	3					2	3	2	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR710	Title of the Course	Advanced Building Structural System	L	T	P	C
Year	II	Semester	IV	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize and to address the students with latest trends in the field of modern and advanced building structural systems.						

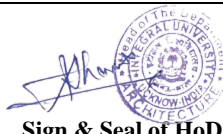
Course Outcomes	
CO1	To understand the importance of advance construction.
CO2	To study different kinds of building forms of the construction.
CO3	To learn about the scope of futuristic buildings to promote sustainability and optimize utilization of the space.
CO4	To impart knowledge about the existing building code and conduct.
CO5	To learn about the technological advancement to cater seismic resistant buildings to meet out safety norms and ascertain life of the habitants.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Advanced Building Structural Systems	Introduction to advance building structural systems, Validity, extent and content of structural knowledge necessary for an architect, need for understanding structural ideas, the difference between structural analysis and creation of structures, development of various forms.	12	1, 3
2	Building Structural Forms	Shell structures; Cable structures; Prismatic structures; Geodesic structures, High-rise structural systems.	12	2, 3, 4
3	Futuristic Buildings	Form-active structure systems, vector-active structure systems, bulk-active structure systems, surface-active structure systems, vertical structure systems.	12	3, 4
4	Building Statutes	Building codes for super multistoried buildings and new Structural Systems;	12	4, 5
5	Earthquake Resistant Design	Need of the earthquake resistant design principles in context of large structures e.g. Multi-storied buildings, Industrial Structures and Special buildings like Nuclear Power-Stations etc.	16	3, 4, 5

Reference Books:	
Masters of Structures- Designing Today's innovative buildings By Sutherland Lyall	
Advanced Building Systems by Klaus Daniels	
Why Buildings Standup By Mario Salvador	
Advance Technologies By Valerio Travi	
Hyper architecture By Luigi Prestineza Puglisi	
Architecture for the Future by Sheila de Vallee	
Masters of Structures- Designing Today's innovative buildings By Sutherland Lyall	
Advanced Building Systems by Klaus Daniels	
e-Learning Source:	
https://books.google.co.in/books/about/Advanced_Technologies.html?id=Rp8US_4PkQwC&redir_esc=y	
https://www.wiley.com/en-au/Why+Buildings+Stand+Up:+The+Strength+of+Architecture-p-9780393306767	
https://www.goodreads.com/book/show/1634644.Advanced_Building_Systems	

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
	CO1	2	2	1	3	1	-	2	-					1	3	2	1	
CO2	3	2	2	2	1	1	1	3					3	-	3	3		
CO3	-	3	1	1	1	-	-	2					2	3	3	1		
CO4	2	2	3	3	2	-	2	2					1	2	2	1		
CO5	1	2	2	1	1	1	2	-					2	3	2	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020

Course Code	AR711	Title of the Course	Cost effective Building design and technology	L	T	P	C
Year	II	Semester	IV	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with latest trends in the field of Cost effective building design and technology.						

Course Outcomes

CO1	To understand key economic analytical principles for decision-making among alternative courses of action in Building design
CO2	To learn about the nature of economics in building design and technology.
CO3	To study analytical techniques including benefit-cost ratio and low cost materials involving comparison and selection of alternatives in materials.
CO4	To learn cost effective construction system and its analytical importance.
CO5	To study various energy optimization techniques

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction To Cost Effective Techniques	Understanding of cost effective parameters; Latest trends in cost effective techniques.	12	1
2	Building Economics	Introduction to construction management principles; Explain how Pre Engineered Construction can be cost effective	14	2
3	Low Cost Materials	Detailed study of low cost materials and technology; List the Materials used Study the availability of Materials, Comprehend the importance of Recycling used Materials, Identify Environmental Issues	15	3
4	Prefabrication	Explain how Prefabricated Construction can be cost effective	9	4
5	Modern Techniques	Manpower, Material and energy optimization in buildings.	14	3, 5

Reference Books:

- Low Cost Housing: AICTE publication Code No. 86
- Sustainable architecture: Low cost Houses by Arian Mostaedi
- Lauri Baker- Life, Works & Writings by Gautam Bhatia

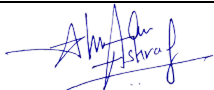

e-Learning Source:

- <https://www.wbdg.org/ffc/nist/criteria/nist-handbook-135>
- <https://www.wbdg.org/design-objectives/cost-effective/utilize-cost-value-engineering>
- <https://www.wbdg.org/design-objectives/cost-effective/use-economic-analysis>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO6	PSO7
	CO1	-	1	-	2	1	-	2	3					3	1	1	1	
CO2	1	2	1	3	-	1	2	2					2	1	2	1		
CO3	-	2	-	3	-	-	3	3					3	2	3	2		
CO4	2	1	1	2	1	2	2	1					2	1	1	1		
CO5	2	2	2	2	1	1	2	3					2	2	2	1		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR712	Title of the Course	Disaster Management	L	T	P	C
Year	II	Semester	IV	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize with basic management principles relating to disaster management and to impart training about various mitigation techniques.						

Course Outcomes	
CO1	To understand disaster management basics and theory (cycle, phases, risk, crisis, emergency, disasters, resilience).
CO2	To study legal framework and compare hazards, disasters and associated natural phenomena and their interrelationships, causes and their effects - developing humanitarian Assistance before and after disaster.
CO3	To learn and Compare anthropogenic hazards, disasters and associated activities and their interrelationships of the subsystems - GreenHouse Effect, Global warming, Causes and their effects and development of humanitarian assistance before and after disaster.
CO4	To impart knowledge about existing global frameworks and existing agreements and role of community in successful Disaster Risk Reduction.
CO5	To learn Technological innovations in Disaster Risk Reduction: Advantages and problems.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction To Disaster Management	Hazards and Disasters, Risk and Vulnerability in Disasters, Natural and Man-made disasters, earthquakes, floods, drought, landside, land subsidence, cyclones, volcanoes, tsunami, avalanches, global climate extremes. Man-made disasters: Terrorism, gas and radiations leaks, toxic waste disposal, oil spills, forest fires.	9	1
2	Legal Framework Relating To Disaster Management	Familiarization with legal framework relating to disaster management Basic principles of disasters management, Disaster Management cycle, Disaster management policy, National and State Bodies for Disaster Management,	12	2
3	Impact Of Large Man Made Disasters	Impact of Global Warming, Large man-made reservoirs, Impact of Extensive Industrialization etc.	15	3
4	Capacity Building For Meeting The Disaster Challenges	Early Warning Systems, Building design and construction in highly seismic zones, retrofitting of buildings.	12	4
5	Disaster Relief And Rehabilitation	Training and drills for disaster preparedness, Awareness generation program, Usages of GIS and Remote sensing techniques in disaster management, Mini project on disaster risk assessment and preparedness for disasters with reference to disasters in Sikkim and its surrounding areas.	16	5

Reference Books:

Disaster Management by Dr. V. K. Seth

Earthquake Architecture - new construction techniques for earthquake disaster prevention by Belev Garcia

Safety in Buildings by V. K. Jain

Uttar Pradesh Apada Prabandh Adhinyam – 2005

e-Learning Source:

<http://ndma.gov.in/>



<http://www.ndrf.gov.in/>

<http://nidm.gov.in/pdf/pubs/ukd-p1.pdf>

<https://www.youtube.com/watch?v=35gjOeGcxEQ>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO4	PSO5	PSO6	PSO7
CO1	1	2	1	3	1	-	2	-					1	3	3	1		
CO2	2	3	2	2	1	1	1	1					2	2	2	2		
CO3	1	2	1	1	1	-	2	2					2	3	3	1		
CO4	1	2	3	3	2	-	2	3					1	2	2	1		
CO5	2	2	2	1	1	1	2	3					2	3	3	2		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR713	Title of the Course	Traffic and Transportation Planning	L	T	P	C
Year	II	Semester	IV	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	<ul style="list-style-type: none"> •Familiarize with the Transportation Systems and how the Transportation planning process is carried out. •Study the methodologies to conduct various transportation surveys for the purpose of accomplishing M. Arch. 						

Course Outcomes	
CO1	Learners will be able to understand Transportation Systems and factors influencing transportation planning. They will also be able to understand basic speed flow relationships
CO2	Learners can understand the hierarchy of the road system in India and factors affecting the capacity and level of service. The student will develop the ability to organize the collection of primary data by using appropriate sampling techniques
CO3	Learners will be familiarized with methods to collect data through various traffic surveys. Organize and execute it for conducting traffic studies
CO4	Learner will develop an understanding of transport planning process and develop the ability to perform an economic evaluation of transport plans
CO5	Learners will be able to understand the need of the project and implementation of transport planning through case studies and transport planning.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction To Traffic And Transportation Planning	Introduction, Objectives and Scope of Traffic designing and planning; Traffic Stream Characteristics Relationship between Speed, low and Density	10	1
2	Traffic Control System Design And Standards	Components of Road Traffic – Vehicle, Driver and Road; Road User and Vehicle Characteristics and their effect on Road Traffic; Traffic Manoeuvres.	12	1, 2
3	Mass Transportation	Mass transportation in urban environments. Bus Stop Location and Bus Bay Design, Design of Road Lighting. provision for safe crossing of Pedestrians and Cyclists;	12	3, 4, 5
4	Innovations In Traffic And Transportation Planning;	Mass transportation in urban environments. Bus Stop Location and Bus Bay Design, Design of Road Lighting. provision for safe crossing of Pedestrians and Cyclists	10	3, 4
5	Case Studies Of Transportation Planning Projects	Note: To get the first hand feel of this subject, students will compulsorily be required to visit at- least one Architecture Institute of National repute and submit a report/ dissertation on new experiments in teaching methodologies in at least 2 subjects	20	3, 4, 5

Reference Books:



- Transportation Planning and Traffic engineering by CAO' Flaherty
- Traffic engineering design by Mike Slinn, Peter Guest and Paul Matthews
- Principles of Transport engineering by Partha Chakarborty and Animesh Das

e-Learning Source:

- <https://archive.nptel.ac.in/courses/105/106/105106058/>
- <https://nptel.ac.in/courses/105107067>
- <https://nptel.ac.in/courses/105105208>
- <https://www.udemy.com/course/transportation-planning/>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	2	3	1	1	1	3	1					1	2	1	1		
CO2	2	1	2	3	1	3	2	1					3	2	2	1		
CO3	2	1	3	2	2	1	2	1					3	3	3	3		
CO4	3	1	2	2	2	1	2	1					3	2	2	3		
CO5	1	3	3	3	3	3	3	3					1	2	3	3		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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Integral University, Lucknow

Effective from Session: 2019 - 2020							
Course Code	AR714	Title of the Course	Teaching Methodologies In Architecture	L	T	P	C
Year	II	Semester	IV	2	2	-	4
Pre-Requisite	Nil	Co-requisite	Nil				
Course Objectives	To familiarize the students with modern teaching tools and methodologies in the field of Architecture education and to improve their sensitivity and aesthetic abilities.						

Course Outcomes	
CO1	Learning about general Theories of Teaching & Principles and strategies of teaching Architecture.
CO2	Knowledge of methods of Planning and organizing Teaching and Managing Classroom/ Studio/ Laboratory Teaching.
CO3	Techniques and Maxims of Teaching Architecture & Evaluation and Quality of Teaching.
CO4	Understanding the Role of Conferences, Seminars and Workshops in the teaching of Architecture and Importance of teaching Architecture through live projects.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	Introduction To Teaching Methodologies In Architecture	Introduction to Teaching Methodologies in Architecture, Theories of Teaching: Formal, Descriptive, Normative	16	1
2	Principles And Strategies Of Teaching Architecture	Principles and strategies of teaching Architecture; Modern approaches of teaching Architecture in India and abroad	12	2
3	Planning And Organizing Teaching	Planning and organizing Teaching; Techniques and Maxims of Teaching Architecture	14	3
4	Managing Classroom/ Studio/ Laboratory Teaching	Managing Classroom/ Studio/ Laboratory Teaching; Role of Computers and Internet in teaching and learning process	12	4
5	Evaluation And Quality Of Teaching	Evaluation and Quality of Teaching; Role of Conferences, Seminars and Workshops in the teaching of Architecture; Importance of teaching Architecture through live projects	10	4

Reference Books:

Narratives of Architectural Education-From Student to Architect by James Thompson

Designing Better Architecture Education: Global Realities and Local Reforms by Manjari Chakraborty

Spatial Design Education: New Directions for Pedagogy in Architecture and Beyond by Ashraf M. Salama

e-Learning Source:

<https://www.sciencedirect.com/science/article/pii/S111001682030020X>



<https://pureportal.strath.ac.uk/en/publications/a-new-paradigm-in-architectural-pedagogy-integrating-environment->

<https://www.arcc-journal.org/index.php/repository/article/download/252/194>

<https://www.cambridge.org/core/journals/arq-architectural-research-quarterly/article/made-in-architecture-education-as-collaborative-practice/AA9E1D80014FCD7FCB0FF735E4FC6810>

Course Articulation Matrix: (Mapping of COs with POs and PSOs)																		
PO-PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1				3			3						3	1	2	2		
CO2				3			3						3	1	1	2		
CO3				3			3						3	1	2	2		
CO4				3			3						3	2	2	2		
CO5																		

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

 Ar. Khurram Ashraf Name & Sign of Program Coordinator	 Sign & Seal of HoD
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