Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.

List and description of the courses of Bachelor of Architecture

S.no.	Semester	Subject Code	Subject Name
1	4	ARL2234	Climatology
2	7	ARL2431	Environmental Studies
3	7	ARL2405	Disaster Risk Management
4	7	ARL2433	Conservation of Historic Buildings
5	7	ARL2435	Vernacular Built Environments
6	7	ARL2437	Cost-effective Buildings
7	8	ARL2426	Sustainable Development of the Built Environment
8	8	ARL2436	Green Buildings & Rating System

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2234*	CLIMATOLOGY	2-0-0	2	NIL
Course Outcomes (CO):				
CO1:	Introduction to the concept and need for "Climate Responsive Architecture", role of climate with respect to shelter, importance of studying Building Climatology, Definition and explanation of thermal comfort.			
CO2:	Understanding of Thermal balance in Human beings			
CO3:	Designing Climate responsive structure			
CO4:	Conceptual understanding of Air flow in Buildings			

Course Content:

Unit-I

- Introduction to the concept and need for "Climate Responsive Architecture", role of climate with respect to shelter, importance of studying Building Climatology, Definition and explanation of thermal comfort.
- Movement of earth around the sun, change of seasons, global climatic zones. Definition of weather, climate, elements of climate, interrelationship of climatic elements and psychometric chart.
- Climatic zones in India and the design of indigenous / vernacular shelters in each of the zones.

Unit 2

- Heat exchange between building and environment (qualitative aspect only), thermal properties of materials, thermal properties of building elements, solar gain factor, solair temperature.
- Design of horizontal and vertical shading devices.

Unit 3

- Air movement inside buildings
- Microclimatic factors – influence of various factors at regional and local scales
- Basic objectives, concepts and principles of design for bioclimatic comfort

Unit 4

- Concepts of Energy and other non-renewable sources, their use in the construction industry and implications for the natural environment. Concepts of embodied energy. Energy use in Buildings: passive and active energy systems.
- Introduction to contemporary passive design methods and technologies used in various climatic zones, with suitable case examples.

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt any one.

Suggested Book(s):

1. Climate Responsive Architecture: A Design Handbook for Energy Efficient Buildings by Arvind Krishan, Tata Mc Graw Hill, New Delhi, 2001
2. Manual for Tropical Housing by O.H. Koenigsberger, Orient Longman , Chennai, 1975
3. Climate Skin: Building- Skin Concepts that can do more with less energy by Hansladen and Gerhard, Birkhausher, Switzerland, 2008
4. Energy Efficient Buildings in India by Mili Majumdar, Tata Energy Research Institute, New Delhi, 2001
5. Climatic Design : Solutions for Buildings that can do more with less technology by Hansladen and Gerhard, Birkhausher , Switzerland, 2005
6. Brown, G. Z. (1985) Sun, Wind and Light: Architectural Design Strategies, John Wiley & Sons, New York.
7. Evans, Martin (1980) Housing, Climate and Comfort, Architectural Press, London.
8. Mani, A. (1980) Handbook of Solar Radiation Data for India, Allied Publishers, New Delhi.
9. Olgyay, A. and Olgyay, V. (1957) *Solar Control and Shading Devices.* Princeton University Press, New Jersey.
10. Robbins, C. L. (1986) Daylighting: Design and Analysis, Van Nostrand Reinhold Co.

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2431*/ ARL2508[2]/ ARL2442[1]	ENVIRONMENTAL STUDIES	2-0-0	02	NIL
Course Outcomes (CO):				
CO1:	Role and importance of environmental resources in improving the quality of human habitat.			
CO2:	Study of factors causing environmental deterioration and degradation.			
CO3:	Available preventive and remedial measures to safeguard the environmental resources.			

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

Course Content:

Unit-I: Introductory Section

- Introduction of Environment and related area (ecosystem, biodiversity, resources) Importance, Classification and Characteristics.
- Definition, scope, importance of various terms (Environment, Ecosystem, Energy flow in ecosystem, ecological pyramids, ecological succession)
- Understanding of major Ecosystem, - Forest, Grassland, Deseret, Aquatic, Hill Area. Understanding of Biodiversity (importance, issues & types)
- Resources - Forest, Water, Mineral, Energy, Land (Role & Importance of each resources as well as associated problems)

Unit-II: Environmental Problems and Issues

- Pollutions types, cause, effects and major solutions (Air, Water, Soil, Marine, Thermal, Nuclear)
- Introduction of Climate change, Global warming, ozone layer depletion, acid rain and nuclear accident. (cause, impact and control major)
- Urban Issues – Solid Waste Management (Residential, Commercial, Industrial, Roads, Hospitals)

Unit-III: Preventive and Remedial Actions

- Major Environment Act – Environment Protection Act, Air Act, Water Act, Wildlife Protection Act, Forest Conservation Act. (Role & major features)
- EIA – Environment Impact Assessment for an architectural project.
- Case studies of ongoing construction projects and/or completed and operational projects

---

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt any one.

Suggested Book(s):

1. Das Gupta, Sumita, Environment Education: A book of activities: Climate change natural resources; Centre for Science & Environment , New Delhi, 2011
2. Mahapatra & Richard, Environment Reader for Universities, New Delhi Centre for Science & Environment, New Delhi, 2017
3. Lawmanns, The Environment Protection Act , Kamal Publishers, New Delhi, 2017
4. P. Sleelakrishan , Environment Law in India, Butterworths, India: 1999
5. P Venugopal Rao (2008) Principles of Environmental Science and Engineering, Prentice Hall of India Private Limited, New Delhi
6. Anil Kumar De and Arnab Kumar De (2007) Environmental Studies, New Age International Publishers, New Delhi.
7. Erach Bharucha (2005) Text book of Environmental Studies for undergraduate courses, Universities Press, Hyderabad
8. Benny Joseph (2009) Environmental Studies, 2nd edition, Tata McGraw-Hill Publishing Company Ltd., New Delhi
9. Goel SL and Kumar R (2001) Disaster management, Deep and Deep publications.

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2405[3]	DISASTER RISK MANAGEMENT	2-0-0	02	NIL

Course Outcomes (CO):

CO1:	Understanding the science of disasters and develop knowledge, insights, and tools needed for the various pre & post-disaster design, planning and management measures.
CO2:	Understanding of preparation and implementation of a disaster risk management plan.
CO3:	Application - Case Study of a public building / group of buildings in an urban context.

Course Content:

Unit-I: Introduction to the Subject

- Understanding the purpose and concept of "Disaster Risk Management" and its role in design and management of the Built Environment
- Understanding natural and human induced disasters (earthquake, fire, floods, cyclones, avalanche, terrorism), classification and their characteristics, causes and effects.
- Identification of hazard, vulnerability and risk factors associated with disasters.
- Understand the Disaster risk management cycle and its various phases

Unit-II: Design for Risk Management

- General requirements, principles and study of structural and non-structural measures / techniques for building design aimed at mitigating the impact of various hazards.
- Understand the process for Emergency Response and Post Disaster Recovery - Awareness of multi emergency and essential services work, both pro-actively (risk reduction, planning and preparedness) and re-actively (response, relief, recovery and rehabilitation)
- Disaster risk management to Cultural heritage -- Understanding the risks/threats posed to our built heritage (historic buildings and areas) and the measures required to reduce such risks.

Unit-III: Application and Case Studies

- Case Study of a public building / group of buildings in an urban context (such as educational and institutional campuses, shopping centres, markets, city centres, offices, banks, museums, auditoria, etc.) to apply the lessons learnt in Unit 1 and Unit 2.
- The objective of the study is understand the process of Risk Assessment at the building and the site level and formulate a Disaster Risk Management Plan
- The project will be divided into 3 stages: (i) The Study: This comprises understanding the building with respect to its function, density of people and risk assessment in terms of vulnerability factors; (ii) The Management Plan: A comprehensive disaster management plan will be prepared with reference to hazard analysis after contemplating on options for Disaster Risk Mitigation of the buildings against various hazards; (iii) Final Presentation: The final presentation will be in the form of sheets and a report.

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt any one.

Suggested Book(s):

1. Disaster risk management of cultural heritage in urban areas: a training guide Publication: Rits Dmuch (Japan), 2013
2. "Freestone, Julie", Disaster preparedness: simple steps for businesses by Viva Books New Delhi. 2004
3. "Gupta, Harsh J., editor", Disaster management Hyderabad Universities 2003
4. Lecture notes for national programme for capacity building for engineers in earthquake risk management by "National disaster management division, Ministry of Home Affairs, Govt. of India", Roorkee Dept. of Earthquake Engg, 2006
5. Disaster Management by Pandey, MrinalinI, Wiley India Pvt Ltd, New Delhi, 2014
6. 100 national disasters: spectacle and tragedy by Vigue, Jordi, Lisse: Rebo Publishers, 2006
7. Disaster Management And Preparedness by Dhawan, Nidhi Gauba, CBS Publishers & Distributors Pvt. Ltd New Delhi, 2014
8. National Building Code of India-2016 Publication : Bureau of Indian Standards
9. Introduction to Hazards-*3rd Edition,* Module prepared by Shelia B. Reed, 1997 – Publication: United Nations Development Programme in collaboration with the Department of Humanitarian Affairs for the Disaster Management Training Programme (DMTP) in association with the University of Wisconsin Disaster Management Center. (Online)
10. Manual on Hazard Resistant Construction in India, 2007, National Centre For People's - Action In Disaster Preparedness. (NCPDP), UNDP (Online)
11. Disaster Management A Disaster Manager's Handbook W. Nick Carter, 2008 Publication: Asian Development BankStrengthening disaster risk management in India: A review of five state disaster management plans (Online)
12. Policy Department Structural and Cohesion Policies, PROTECTING THE CULTURAL HERITAGE FROM NATURAL DISASTERS, Authors: M. Drdacky, Director, ITAM v.v.i.- Advanced Research Centre for Cultural Heritage Interdisciplinary Projects (ARCCHIP), Czech Republic (Online)

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2433*/ ARV2435 [1,2]	CONSERVATION OF HISTORIC BUILDINGS	2-0-0	02	NIL
Course Outcomes (CO):				
CO1:	Understanding the significance of historic buildings and areas in the present-day context.			
CO2:	The architect's role in the process of conserving historic environments.			
CO3:	Application - Implementation of lessons learnt through a case study.			

Course Content:

Unit-I: Identification, Evaluation and Documentation

- Definition and significance of 'Historic Environments' and 'Cultural Heritage'..
- Identification, Evaluation and Classification (Grading) of Historic Buildings and areas.
- Concept and significance of "World Heritage"
- Definition and purpose of Architectural Conservation. Values and Ethics, Issues of Authenticity and Integrity

Unit-II: Conservation Action and Management of Built Heritage

- Causes of Decay of Materials and Structure in Historic Structures.
- Philosophy of Action – Degrees of Interventions such as Preservation, Restoration, Reconstitution, Adaptive Use, etc.
- Contemporary Interventions in Historic Properties -- (i) Adaptive Re-use: Ethics and Intervention methods.; (ii) Retrofitting Historic Buildings – Need & Methods; (iii)Introducing new buildings in Historic Environments.

Unit-III: Case Study

- Lectures on the Purpose, procedures and methods of Documentation - Inventories; Research and documentation; various aspects of study, e.g. historicity, stylistic features, usage, physical condition, etc.

- Site/ Field study of a historic building / group of buildings, documenting various material and non-material aspects, identification of tangible and intangible values, assessment of physical condition and threats, and, giving recommendations for necessary interventions /conservation action.
- The Site/ field Study may comprise a historic settlement or group of buildings or a single building or even parts of a single building. The project may be a fresh one, or a continuation of an older one, and, the project objectives would be formulated accordingly by the Course Coordinator/s.
- The Study would be preceded by collection of data of all social, cultural, physical and contextual factors affecting the chosen built environment
- The Site Study could include measured drawings, photographs, stakeholder surveys, and other factors relevant to the project objectives.
- A well-illustrated written report covering all aspects studied and prepared in a prescribed format.

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt any one.

Suggested Book(s):

1. Feilden, Bernard M. and Jokilehto, Jukka. Management Guidelines for World Cultural Heritage Sites. Rome: ICCROM, 1998.
2. Tandon, Rajeshwari, editor. A Case for National Policy for Heritage Conservation & Management. New Delhi: INTACH, August 2002.
3. Feilden, Bernard. Guidelines for Conservation: A Technical Manual. New Delhi: Indian National Trust for Art and Cultural Heritage (INTACH), 1989.
4. Indian National Trust for Art and Cultural Heritage (INTACH), Architectural Heritage Division, New Delhi. Conserving the Heritage of Our Historic Cities: Pre Seminar Working Document. New Delhi: INTACH, 1999.
5. Bisht, A.S., et al (2000) Conservation of Cultural Property in India, Agam Kala Prakashan, Delhi.
6. Identification and documentation of built heritage in India, Divay Gupta, INTACH, New Delhi, 2007
7. A manual of construction documentation: an illustrated guide to preparing construction drawings, Glenn E. Wiggins, Whitney Library of Design, New
8. Heritage conservation: preservation and restoration of monuments, N.L. Batra, Aryan Books International, New Delhi, 1996
9. Jethabhai Ni Pol, Khadia-Ahmedabad: A documentation of the living environments, Munjal Bhatt and others, Vastu-Shilpa, Ahmedabad, 1997
10. Identification and documentation of modern heritage: world heritage papers (5,6,7,8,9), Francesco Bandarin, UNESCO, France, 2003
11. The Architectural heritage: :Madras, Kalpana k. and Frank Schiffer, INTACH, Tamil Nadu, 2000
12. Calcutta: Built Heritage Today, Nilina Deb Lal, INTACH, New Delhi, 2006
13. Haryana: Cultural heritage, Shikha Jain, INTACH, New Delhi, 2012
14. Historic Building Conservation and Sustainability, Adit Pal, INTACH, New Delhi, 2005

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2435*/ ARV2429 [1,2]	VERNACULAR BUILT ENVIRONMENTS	2-0-0	02	NIL

Course Outcomes (CO):

CO1:	Understanding the characteristics and significance of Vernacular Built Environments.
CO2:	Learning from the past and contributing to the built environment of today.
CO3:	Application - Case examples of Vernacular Built Environments.

Course Content:

Unit-I: Introduction to Vernacular Architecture

- Defining vernacular architecture, understanding the challenges and threats to vernacular built environment.
- Examples of vernacular architecture from across the globe.
- Study of importance of vernacular built environments in contemporary times.

Unit-II: Determinants of Vernacular Architecture

- People, Culture and Vernacular: culture and the emergence of vernacular architecture
- Climate and the Vernacular: influence of various climatic types on the building typologies.
- Materials, Construction and Vernacular: relationship between building materials, structures and associated expertise and rituals in the building process.

Unit-III: Examples of Vernacular Built Environments

- Case studies from India, Asia and Africa: the analytical framework of socio-cultural aspects, climatic forces, materials, construction techniques and details will be used to explain the selected case studies.

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt any one.

Suggested Book(s):

1. Built to Meet Needs: Cultural Issues in Vernacular Architecture by Paul Oliver, Published by Architectural Press, Burlington
2. Vernacular Architecture: An Illustrated Handbook by R.W. Brunskill, Published by Faber and Faber, London (2000)
3. Vernacular Traditions: Contemporary Architecture by Aishwarya Tipnis, Published by The Energy and Resources Institute (2012)
4. Don't Tear it Down!: Preserving the Earthquake Resistant Vernacular Architecture of Kashmir by Randolph Langenbach, Published by UNESCO, New Delhi (2009)
5. Manual of Tropical Housing & Building by Otto H. Koenigsberger, Published by Orient Longman Private Limited (1973)
6. Himalayan Style: Shelters and Sanctuaries by Claire Burkett and Thomas L. Kelly, Published by Lustre Press Roli Books, New Delhi (2014)
7. Encyclopedia of Vernacular Architecture

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2437*/ ARV2433 [1,2]	COST-EFFECTIVE BUILDINGS	2-0-0	02	NIL

Course Outcomes (CO):

CO1:	Understanding the concept, significance, basic principles and design strategies of "Cost-effective" architecture.
CO2:	Study of conventional and non-conventional resources used for cost-effective construction.
CO3:	Application - Critical analysis of concepts learnt through case examples.

Course Content:

Unit-I: Introduction to "Cost-effective Architecture":

- Introduction to definition and concept of Cost-effective Buildings
- Background to the CEBs; Globalization and its effect; Poverty in our country
- Cost effectiveness as a principle. Its context w.r.t our country and the need for Cost-effective Buildings in both rural & urban sectors.
- Various organizations – both government & NGOs -- associated with promotion and actualization of CEBs.

Unit-II: Cost-effective Techniques

- Strategies and Methods for reducing cost through Planning and Design
- Use of Cost-effective technologies through the use of local materials, up gradation of traditional technologies, Prefabrication, etc.
- Innovations of building techniques for Cost-effective construction.
- Comparative analysis of building materials, both conventional and non-conventional, and their costing.
- Case Examples to support above theory and principles.

Unit-III: Case Studies

- Study of works of eminent architects in India and abroad. Notable examples of Architects' cost effective designs: The work of Laurie Baker, etc.
- Research and development works of various agencies dealing with cost-effective technology.
- Examples of Affordable Housing
- Case study of a typical cost effective building (large residences, offices, apartments, public buildings or institutions) considering various aspects discussed previously. Critical analysis in terms of initial investment, maintenance cost and longevity of buildings.

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt any one.

Suggested Book(s):

1. Bhatia, Gautam (1994) Laurie Baker: Life, Works & Writings. New Delhi: Penguin Books
2. Bonner, Roger R. M. (1996) Vidyalayam: Cost Effective Technologies for Primary School Construction. New Delhi: British Council Division
3. Doshi, B. V. (1983) Low Cost Housing: an Analytical Study of the Current Practices & Techniques. Ahmedabad: Vaastu Shilpa Foundation

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

4. HUDCO, Is it possible?: The Alternate Approach: Cost Effective Technology Applications for Building Solutions. New Delhi: HUDCO
5. Jagadish, K. S. & others (2007) Alternative Building Materials and Technologies. New Delhi: New Age Intl. Pvt. Ltd.
6. Poulose, K. Thomas (2002) Reading Material on Housing. New Delhi: Institute of Town Planners
7. Rewal, Raj (2000) Raj Rewal: Humane Habitat at Low Cost: CIDCO, Belapur, New Bombay. New Delhi: Tulika
8. Steele, James (1997) An Architecture for People: The Complete Works of Hassan Fathy. London: Thames & Hudson

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2426*/ ARV2437[1,2]	SUSTAINABLE DEVELOPMENT OF THE BUILT ENVIRONMENT	2-0-0	02	NIL

Course Outcomes (CO):

CO1:	Understanding the current global, political, economic and environmental crisis.
CO2:	Understanding the role of sustainable built environments in redressing the issues.
CO3:	Study of the best practices in design and construction that help to achieve sustainable development.
CO4:	Learning how to use simulation tools that aid in creating passive design of buildings.

Course Content:

Unit-I: Understanding "Sustainability"

- What is sustainability, and why is it the underlying factor for various socio-economic/environmental development plans all around the world. Its correlation to population growth & consumption patterns. Bruntland Commission Report, Kyoto Protocol, Earth Summit, Strategic Environmental Assessment.
- Significance of sustainability in built environment and construction industry: considering sustainability as an opportunity to transform rather than a challenge in design. Sustainability and Anthropocene.
- Performance and productivity of users in sustainable environs. How do Sustainable buildings pay back?

Unit-II: Sustainable Design and Development Options

- Development of sustainable master-plans. Places v/s spaces, relevance to context, climate and social fabric, Green washing, Heat Island effect, Sustainable Waste and Water Management and, Net Zero Energy Buildings
- Sustainable construction planning and management of sites during construction. Roles and expectations of the Design and Construction Team.
- Challenges to achieving sustainable development in India and around the world with reference to actual case studies and Historic Rehabilitation.

Unit-III: Simulation Tools

- Importance of simulation tools in analysis of heating loads and lighting.
- Introduction to various tools like ecotect, sefaira, google sketch-up etc. for real-time daylight and thermal analysis in buildings and campuses.

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.

- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example, a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt anyone.

Suggested Book(s):

1. Green Buildings Pay:design, productivity and ecology By Brian Edwards, Published by London Routledge (2013)
2. Sustainable building- Design manual: Vol 1: Policy and regulatory mechanisms By Institut Catala d' Energia, Pulished by New Delhi Teri (2004)
3. Sustainable building- Design manual: Vol 2: Policy and regulatory mechanisms By Institut Catala d' Energia, Pulished by New Delhi Teri (2004)
4. Fundamentals of Integrated Design for Sustainable Building By Marian Keeler, Prasad Vaidya, Published by John Wiley and Sons (2016)
5. Bansal, N. K. & Minke, G. (eds) (1995) Climatic Zones and Rural Housing in India, Forschungszentrum Julich, Julich (Germany).
6. Oliver, Paul (ed) (1997) Encyclopedia of Vernacular Architecture of the World, vol. 1-11, Cambridge University Press, Cambridge.
7. Buchanan, P. (2005) Ten shades of green: architecture and the natural world, The Architectural League of New York.
8. Givoni, B. (1994) Passive and low-energy cooling of buildings, Van Nostrand Reinhold.
9. Guzowski, M. (2000) Daylighting for sustainable design, McGraw Hill (Professional Architecture Series).
10. Hyde, R. (2000) Climate responsive design: a study of buildings in moderate and hot humid climates, E & F N Spon, London.
11. Majumdar, M. (Ed.) (2002) Energy efficient buildings in India, MNES/TERI.
12. Sayigh, A A M (1991) Energy conservation in buildings, Pergamon Press, Oxford.
13. Shaw, Alexander (1989) Energy design for architects, Fairmont Press, Lilburn.
14. Nayak J. K. et.al (1999) Manual on Solar Passive Architecture, Solar Energy Center, Ministry of Non-Conventional Energy Sources, Government of India, New Delhi

Course Code	Course Name	L/T-P-S	Credits	Pre-requisite
ARL2436*	GREEN BUILDINGS & RATING SYSTEMS	2-0-0	02	NIL
Course Outcomes (CO):				
CO1:	Sensitivity towards green architecture, along with design and construction measures required for minimising the impact of built environment.			
CO2:	Knowledge of international and Indian building rating systems.			
CO3:	Analyse the various concerns raised in promotion of green buildings by addressing opportunities, technical concerns and financial benefits, along with future avenues.			

Course Content:

Unit-I: Introduction to the need and promotion of green buildings

- This component covers measures to minimize the impact of development on environment through all manners of "green construction" techniques. Topics include:
- Introduction to the concept and definition of Green Buildings, benefits to the individual user and the society, economic and technical challenges in development of green buildings,
- Life Cycle Assessment of buildings and building materials,
- Green construction technologies
- Minimizing energy consumption to promote sustainability.

Unit-II: Rating Systems

- The second component deals with minimizing the operational energy requirements through principles of reduce, recycle and repair. Topics include:
- Evaluation of internationally accepted LEED and the Indian GRIHA based building rating systems,
- Study of case examples listed in LEED and GRIHA building rating systems within the Indian subcontinent.

Unit-III: Management of Existing Buildings

- The third component emphasises minimizing energy consumption and incorporation of renewable energy sources within the existing built environment. Topics covered:
  - Rating systems for Existing Buildings,
  - Retrofitting Measures,
  - Suitable case examples

Instructions to the Examiner:

Duration of Examination: 3 hours

Content of the paper:

- The paper will have four sections.
- The Section I will be compulsory and will carry 40% marks of total maximum marks. The section will contain 4 short questions, (each carrying equal marks), covering the entire Course Content out of which one is general question and remaining 3 will be one each from each of the three units of the syllabus.
- Sections II, III and IV will correspond to the three Units of the Course Content, i.e., Unit 1, Unit 2 & Unit 3 and each section will carry 20% marks respectively. Each Section will have 2 questions of equal marks each, of which the candidate will attempt any one of his /her choice.
- For example, a subject carrying 50 marks, Section I will carry total maximum marks of 20. Section II, III, IV will have questions of 10 marks each, of which candidate will attempt anyone.

Suggested Book(s):

1. Buchanan, P. (2005) Ten shades of green: architecture and the natural world, The Architectural League of New York.
2. Givoni, B. (1994) Passive and low-energy cooling of buildings, Van Nostrand Reinhold.
3. Guzowski, M. (2000) Day lighting for sustainable design, McGraw Hill (Professional Architecture Series).
4. Hyde, R. (2000) Climate responsive design: a study of buildings in moderate and hot humid climates, E & F N Spon, London.
5. Majumdar, M. (Ed.) (2002) Energy efficient buildings in India, MNES/TERI.
6. Shaw, Alexander (1989) Energy design for architects, Fairmont Press, Lilburn.
7. Nayak J. K. et.al (1999) Manual on Solar Passive Architecture, Solar Energy Center, Ministry of Non-Conventional Energy Sources, Government of India, New Delhi

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.

List and description of the courses which address the Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum.

Bachelor of Design (Interior Design)

S.no.	Semester	Subject Code	Subject Name
1	3rd	IDL2212	Indoor Environmental Control-I
2	3rd	IDC2328	Sustainable Interiors
3	4th	IDL2213	Indoor Environmental Control-II
4	5th	IDL2319	Environmental Studies
5	5th	IDL2320	Disaster Management & Project Management
6	6th	IDL2321	Human Rights & Values & Professional Practice
7	6th	IDL3322	Ecology & Landscape Elements

Master of Design (Interior Design)

S.no.	Semester	Subject Code	Subject Name
1	1st	MID3112	Introduction to Building Energy Efficiency
2	3rd	MID2320	Sustainable Design
3	4th	MID3423	Professional Practice & Management

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Bachelor of Design (Interior Design)

Course Code	Course Name	L-T-P	Credits
IDL2213	Indoor Environment Control- II	2-0-0	2
Course Outcomes(CO):			
CO1:	Understand the passive design measures and techniques		
CO2:	Understand the techniques and technologies for green interior design		
CO3:	Understand the applications of green interiors in residences; hospitality spaces; commercial spaces; offices and public spaces		

Course Contents

Unit I:

Air movement inside buildings

Positioning and size of openings with respect to climate

Brief introduction to passive design measures/technique for climate control.

Unit II:

Introduction – green materials; principles of eco-friendly designs; natural building and eco-friendly design; sustainable materials like bamboo, cork, jute etc.; unexplored alternate materials for furniture and accessories; fabrics; surface finishes;

Selection of healthy and environmentally responsible materials and products; design concepts, techniques and technologies for green interior design – green walls; design concepts related to use of accessories; reducing energy consumption; systems for reducing energy conservation and water consumption; energy efficient lighting; waste and toxic reduction; recycle and reuse.

Unit III:

Design concepts; furniture design; product design for interiors using recycling materials.

Study and application of green interiors in residences; hospitality spaces; commercial spaces; offices and public spaces.

Prescribed Text Book(s):

1. Harimohan Pillai – Heritage Conservation and Cultural Continuity – Saraswatham Publishers, 2002.
2. Sustainable Building Design Manual – TERI Publication, 2004.
3. Waste Management And Recycling – Compiled by C.T. Lakshmanan, SRM University.
4. Sandra F Mendler - The HOK Guide Book for Sustainable Design – John Wiley and Sons, Canada, 2002.
5. Conservation Guidelines for Pondicherry – DTCP, Pondicherry – INTACH 2000.

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Course Code	Course Name	L-T-P	Credits
IDC2328	**Sustainable Interiors**	1-1-0	2

Course Objectives:
- Understand the complexities of the design of sustainable buildings.
- Select materials to decrease environmental impacts at the local level

Course Outcomes(CO):

CO1:	Account for different theoretical and applied design principles and models for sustainable design
CO2:	Account for and critically relate to sustainable design from an ethical, cultural and historical perspective
CO3:	Critically review different design solutions ecological, social and economic consequences, risks, possible uses and functions in the work for a sustainable development

Course Contents

UNIT I: Understanding "Sustainability"

- What is sustainability, and why is it the underlying factor for various socio-economic/environmental development plans all around the world. Its correlation to population growth & consumption patterns. Bruntland Commission Report, Kyoto Protocol, Earth Summit, Strategic Environmental Assessment.
- Significance of sustainability in built environment and construction industry: considering sustainability as an opportunity to transform rather than a challenge in design. Sustainability and Anthropocene.
- Performance and productivity of users in sustainable environs. How do Sustainable buildings pay back?

UNIT II: Sustainable Design and Development Options

- Development of sustainable interior plans. Places v/s spaces, relevance to context, climate and social fabric, Green washing, Heat Island effect, Sustainable Waste and Water Management and, Net Zero Energy Buildings
- Sustainable construction planning and management of sites during construction. Roles and expectations of the Design and Construction Team.
- Challenges to achieving sustainable development in India and around the world with reference to actual case studies and Historic Rehabilitation.

UNIT III: Simulation Tools

- Importance of simulation tools in analysis of heating loads and lighting.
- Introduction to various tools like ecotect, sefaira, google sketch-up etc. for real-time daylight and thermal analysis in buildings and campuses.

Prescribed Text Book(s):

1. Green Buildings Pay:design, productivity and ecology By Brian Edwards, Published by London Routledge (2013)
2. Sustainable building- Design manual: Vol 1: Policy and regulatory mechanisms By Institut Catala d' Energia, Pulished by New Delhi Teri (2004)
3. Sustainable building- Design manual: Vol 2: Policy and regulatory mechanisms By Institut Catala d' Energia, Pulished by New Delhi Teri (2004)
4. Fundamentals of Integrated Design for Sustainable Building By Marian Keeler, Prasad Vaidya, Published by John Wiley and Sons (2016)
5. Bansal, N. K. & Minke, G. (eds) (1995) Climatic Zones and Rural Housing in India, Forschungszentrum Julich, Julich (Germany).
6. Oliver, Paul (ed) (1997) Encyclopedia of Vernacular Architecture of the World, vol. 1-11, Cambridge University Press, Cambridge.

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

7. Buchanan, P. (2005) Ten shades of green: architecture and the natural world, The Architectural League of New York.
8. Givoni, B. (1994) Passive and low-energy cooling of buildings, Van Nostrand Reinhold.
9. Guzowski, M. (2000) Daylighting for sustainable design, McGraw Hill (Professional Architecture Series).
10. Hyde, R. (2000) Climate responsive design: a study of buildings in moderate and hot humid climates, E & F N Spon, London.
11. Majumdar, M. (Ed.) (2002) Energy efficient buildings in India, MNES/TERI.
12. Sayigh, A A M (1991) Energy conservation in buildings, Pergamon Press, Oxford.
13. Shaw, Alexander (1989) Energy design for architects, Fairmont Press, Lilburn.

Course Code	Course Name	L-T-P	Credits
IDL2213	Indoor Environment Control- II	2-0-0	2

Course Outcomes(CO):

CO1:	Understand the passive design measures and techniques
CO2:	Understand the techniques and technologies for green interior design
CO3:	Understand the applications of green interiors in residences; hospitality spaces; commercial spaces; offices and public spaces

Course Contents

Unit I:

Air movement inside buildings

Positioning and size of openings with respect to climate

Brief introduction to passive design measures/technique for climate control.

Unit II:

Introduction – green materials; principles of eco-friendly designs; natural building and eco-friendly design; sustainable materials like bamboo, cork, jute etc.; unexplored alternate materials for furniture and accessories; fabrics; surface finishes;

Selection of healthy and environmentally responsible materials and products; design concepts, techniques and technologies for green interior design – green walls; design concepts related to use of accessories; reducing energy consumption; systems for reducing energy conservation and water consumption; energy efficient lighting; waste and toxic reduction; recycle and reuse.

Unit III:

Design concepts; furniture design; product design for interiors using recycling materials.

Study and application of green interiors in residences; hospitality spaces; commercial spaces; offices and public spaces.

Prescribed Text Book(s):

1. Harimohan Pillai – Heritage Conservation and Cultural Continuity – Saraswatham Publishers, 2002.
2. Sustainable Building Design Manual – TERI Publication, 2004.
3. Waste Management And Recycling – Compiled by C.T. Lakshmanan, SRM University.
4. Sandra F Mendler - The HOK Guide Book for Sustainable Design – John Wiley and Sons, Canada, 2002.
5. Conservation Guidelines for Pondicherry – DTCP, Pondicherry – INTACH 2000.

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Course Code	Course Name	L-T-P	Credits
IDL2319	**Environmental Studies**	**2-0-0**	**2**

Course Objectives:

- To bring in an awareness amongst students regarding the nature of environmental resources as well as the role and importance of these in improving the quality of human habitat
- To acquaint students with various factors causing environmental deterioration and degradation and the available preventive and remedial to safeguard the environmental resources.

Course Outcomes(CO):

CO1:	An introduction to Environment and its relationship with human being. Study of Types of human environment and the need for interaction with the environment.
CO2:	Understanding Environmental issues and concerns and remedial measures
CO3:	Understanding the transformations-urban scenario, need, compromise, policies, etc.
CO4:	Understanding pro-environmental behaviour &Humans affecting the environment. Different eras of Man relationships

Course Contents

UNIT-1: INTRODUCTORY SECTION

• Introduction of Environment and related area (ecosystem, biodiversity, resources) Importance, Classification and Characteristics.

• Definition, scope, importance of various terminology (Environment, Ecosystem, Energy flow in ecosystem, ecological pyramids, ecological succession etc.)

• Understanding of major Ecosystem, - Forest, Grassland, Deseret, Aquatic, Hill Area. Understanding of Biodiversity (importance, issues & types of biodiversity)

• Resources - Forest, Water, Mineral, Energy, Land (Role & Importance of each resources as well as associated problems)

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

UNIT-2: ENVIRONMENTAL PROBLEMS AND ISSUES
- Pollutions types, cause, effects and major solutions (Air, Water, Soil, Marine, Thermal, Nuclear)
- Introduction of Climate change, Global warming, ozone layer depletion, acid rain and nuclear accident. (cause, impact and control major)
- Urban Issues – Solid Waste Management (Residential, Commercial, Industrial, Roads, Hospitals)

UNIT-3: PREVENTIVE AND REMEDIAL ACTIONS
- Major Environment Act – Environment Protection Act, Air Act, Water Act, Wildlife Protection Act, Forest Conservation Act. (Role & major features)
- EIA – Environment Impact Assessment for an interior design project.
- Case studies of ongoing construction projects and/or completed and operational projects

Prescribed Text Book(s):

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad – 380 013, India,
3. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p
4. Clark R.S., Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p
6. De A.K., Environmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford Univ. Press. 473p
9. Hawkins R.E., Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay
10. Heywood, V.H & Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.

Course Code	Course Name	L-T-P	Credits
IDL2320	**Disaster Management & Project Management**	1-0-3	2

Course Objectives:
- To create awareness among students about various causes of occurrence of disaster
- To help them understand the steps to be taken for reducing the conditions leading to disaster
- To expose students to the current techniques of planning, programming and management of a project ensuring safety and quality of resources at construction sites.

Course Outcomes(CO):

CO1:	Demonstrate knowledge and understanding of interior design management principles
CO2:	Able to manage projects and in multidisciplinary environment
CO3:	Understanding disaster management and able to apply remedial measures
CO4:	Able to manage projects with respect to timelines, safety and quality

Course Contents

UNIT-I: INTRODUCTION TO DISASTER MANAGEMENT & CLASSIFICATION
- Introduction Concepts and definitions (Disaster, Hazard, Vulnerability, Resilience, Risks); Causes, Impacts (including social, economic, political, environmental, health, psychosocial, etc.). Differential impacts in terms

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

of caste, class, gender, age, location, disability. Global trends in disasters, urban disasters, pandemics, complex emergencies, Climate change issues.
• Factors affecting Vulnerabilities, impact of Development projects such as dams, embankments, changes in Land-use etc. Nuclear hazards, Disaster management: floods, earthquake, cyclone and landslides. Nuclear accidents and holocaust, Wasteland reclamation;

UNIT-II: DISASTER RISK REDUCTION & DISASTER RISK MANAGEMENT IN INDIA
• Disaster cycle - its analysis, Phases, Culture of safety, prevention, mitigation and preparedness, community based DRR, Structural- non-structural measures, roles and responsibilities of- community, Panchayati Raj Institutions/ Urban Local Bodies (PRIs/ULBs), states, Centre, and other stake-holders.
• Hazard and Vulnerability profile of India, Components of Disaster Relief: Water, Food, Sanitation, Shelter, Health, and Waste Management. Mitigation, Response and Preparedness, DM Act and Policy. NDMA and its mandate, SDMA/DDMA, civil defence, requisition of Armed Forces in case of disaster under Aid to Civil Power Act.

UNIT-III: PROJECT MANAGEMENT, SAFETY AND QUALITY MANAGEMENT
• Significance of Project Management, Aim, objectives and functions of Project Management; Understanding Program Evaluation Review Technique (PERT) & Critical Path Method (CPM).
• Planning of temporary services at the site, Safety precautions & Security of materials at construction sites. Stages of inspection and quality control.

PROJECT WORK:
• Undertaking Field work / Case Study of a building / group of buildings The project /fieldwork are meant for students to understand vulnerabilities and to work on reducing disaster risks and to build a culture of safety.

Prescribed Text Book(s):

1. Carter, W. Nick. 2008. Disaster Management: A Disaster Manager's Handbook. © Asian Development Bank.
2. Industrial Disaster Management and Emergency Response, Chakrabarty, Asian Books Pvt. Ltd., New Delhi, Edition, 2009.
3. Dr. B.C.Punmia et al. Project planning and control with PERT and CPM, Laxmi Publications, (1 September 2016).

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Course Code	Course Name	L-T-P	Credits
IDL2321	Human Rights & Values & Professional Practice	2-0-0	2

Course Objectives:

- To help them understand the extent of their rights at national and international level.
- To make them sensitize towards human values and human adversities.
- To bring in an awareness regarding Professional Ethics in Interior Design Practice in India.
- To provide a comprehensive understanding of the nature of interior design practice, business aspects of management of interior firms, career management and decision-making.

Course Outcomes(CO):

CO1:	Students should understand the extent of their rights at national and international level
CO2:	Understanding human values and human adversities
CO3:	Awareness regarding Professional Ethics in Interior Design Practice

Course Content:

UNIT-I: HUMAN VALUES & VALUE EDUCATION:

- Concept of human values and value education: Aim of education and value education; Evolution of value oriented education; Personal Development: Personal development: Self-analysis and introspection; sensitization towards gender equality, physically challenged, intellectually challenged. Respect to - age, experience, maturity, family members, neighbors.
- Value education towards national and global development, Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity, Social Values - Pity and probity, self-control, universal brotherhood. Professional Values - Knowledge thirst, sincerity in profession, ethics, regularity, punctuality and faith.

UNIT-II: GLOBAL DEVELOPMENT & HUMAN RIGHTS

- Impact of global development on ethics and values. Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, professional challenges and compromise. Therapeutic measures: Control of the mind through physical exercise, meditation, Objectives, types, effect on body, mind and soul and Yoga.
- Human rights – general: Concept of Human Rights – Indian and International Perspectives; Evolution of Human Rights; Definitions under Indian and International documents. Human rights and Indian Constitution; Human rights of women and children and Institutions for implementation

UNIT-III: PROFESSIONAL PRACTICE

- Interior Designers – Role, Functions, Social Obligations, Profession Activities, Responsibilities etc.

Institute of Indian Interior Designers – History, Scope, Objectives, Role and Function in promoting Interior Design profession and education.

Duties, Responsibilities and Liabilities of Client, Interior Designers, Contractor and their mutual relationship & Copy Right Act as Applicable to Interior Design work. Professional Ethics & Conduct.

CHITKARA SCHOOL OF PLANNING & ARCHITECTURE

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Course Code	Course Name	L-T-P	Credits
IDL3322	Ecology & Landscape Elements	2-2-0	3

Course Objectives:

- To study the concepts of interior landscaping and their application in the design of interior spaces.
- To develop an understanding about the design of interior landscape with special emphasis on the choice and care of plant materials used in the interior spaces.

Course Outcomes(CO):

CO1:	Concepts of interior landscaping and their application in the design of interior spaces
CO2:	Able to do design of interior landscape with special emphasis on the choice and care of plant materials used in the interior spaces
CO3:	Able to understand elements of ecology and the principles which govern ecology

Course Contents

UNIT – I INTERIOR LANDSCAPING & PHYSICAL REQUIREMENTS OF PLANTS

• Definition, classification of plants, indoor plants and their functions, layout & components, Floriculture – commercial, ornamental, Selection of plants & pest control.

• Physical requirements of plants – light, temperature, water, planting medium, soil separator, weight of plants, acclimatization & maintenance. Techniques to meet physical requirements.

UNIT – II INTERIOR LANDSCAPING ELEMENTS & PRINCIPLES

• Various interior landscaping elements – water bodies - pools, fountains, cascades Plants, rocks, artifacts, paving & lighting, Design guidelines- plant texture & colour, plant height, plant spacing.

• Principles of landscape and their influence on exterior & interior space

UNIT – III ECOLOGY: ELEMENTS & PRICIPLES

• To explore the elements of ecology and the principles which govern ecology, leading towards a better understanding of the environment.

• Concepts and development theories and examples of modern gardens (industrial era onwards); site planning (based on features of landscape architecture) and the study and analysis of site features; design guidelines; site structure plans and road geometrics

Prescribed Text Book(s):

1. Time saver standards for landscape architecture. By Charles W. Harris, Nicholas T. Dines © 2011 | Published: October 24, 2011
2. Planting Design Kindle Edition by Theodore D. Walker (Author) Format: Kindle E Publisher : Wiley (2 May 2008)
3. Landscaping Principles and Practices By Jack Ingels Published by Delmar Cengage Learning, 2003.
4. Residential Landscape Architecture: Design Process for the Private Residence: United States Edition , by Norman K. Booth (Author), James E. Hiss (Author) Publisher : Pearson (3 March 2011)
5. Landscape Design: A Practical Approach , 10 May 2001 by Leroy Hannebaum (Author) Publisher : Pearson (10 May 2001)
6. Fleming, John and Honour, Hugh. (2004). The Penguin Dictionary of Architecture and Landscape Architecture. 5th (revised) edition, Penguin.

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Master of Design (Interior Design)

Course Code	Course Name	L-T-P	Credits
MID3112	**Introduction To Building Energy Efficiency**	2-1-0	3
Course Outcomes(CO):			
CO1:	Understand the concept and benefits of energy efficiency in buildings.		
CO2:	Understand the methodology used to determine the energy efficiency of buildings.		
CO3:	Understand the opportunities and measures for reducing energy use in buildings without sacrificing comfort levels.		

Course Contents

UNIT I

- Building fundamentals for energy efficiency (heat/moisture/air)
- Heat transfer & building assemblies
- Solar geometry

UNIT II

- Energy efficiency in building methodology. Determining building's energy performance
- Certifying energy efficiency
- Low e glass & low energy building design

UNIT III

- Energy efficiency measures for buildings; reducing heating demand
- Improving air tightness
- Improving insulation of building fabric by ways of Building Design

Prescribed Text Book(s):

1. Energy-efficient Buildings in India by Mili Majumdar.
2. Green Interior Design 1st Edition by Lori Dennis.
3. Sustainability in Interior Design by Siân Moxon.

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Course Code	Course Name	L-T-P	Credits
MID2320	**Sustainable Design**	**2-1-0**	**3**

Course Objectives:

- To understand and analyze the effects of consumerism on the environment.
- To be able to apply sustainable practices in everyday life.
- Evaluate contemporary products and solutions to environmental design issues in the built environment.

Course Outcomes(CO):

CO1:	Understand sustainability and its roles in Interior Design
CO2:	Able to apply sustainable practices in Interior Design
CO3:	Learn the skills of developing sustainable Interior Designs

Course Contents

UNIT I: INTRODUCTION

Understanding the environmental issues. Historic examples of sustainable design. Sustainability & its role in interior designing. Step by step design impact of every project on the environment during its life cycle. Waste, reuse and recycling, benign emissions, green design.

UNITII: APPROACH TO SUSTAINABILITY

Sustainable design principles. Physical, mental, spiritual, cultural, social, ethical and economic issues in designing for sustainability.
Ecological footprints, ecosystem impact.

UNITIII: DEVELOPING SUSTAINABLE DESIGNS

Effects of building services, materials and construction methods on the key environmental issues. Sustainable design choices about energy and water systems, products and assemblies for interior projects through Renewable energy systems , Water re-use and recycling etc.

Prescribed Text Book(s):

1. Williams, D. E. (2007). Sustainable design: Ecology, architecture, and planning. John Wiley & Sons.
2. Walker, S. (2012). Sustainable by design: Explorations in theory and practice. Routledge.
3. Mendler, S., & Odell, W. (2000). The HOK guidebook to sustainable design. John Wiley & Sons.
4. Fairs, M. (2009). Green design: creative sustainable designs for the twenty-first century. North Atlantic Books.

SCHOOL OF PLANNING & ARCHITECTURE-CHITKARA

DEPARTMENT OF INTERIOR DESIGN
CHITKARA SCHOOL OF PLANNING & ARCHITECTURE (CSPA)

Course Code	Course Name	L-T-P	Credits
MID3423	**Professional Practice & Management**	2-0-0	2

Course Objectives:

- To bring in an awareness regarding institutional framework for Interior Design Practice in India.

Course Outcomes(CO):

CO1:	Comprehensive understanding of the nature of interior design practice, business aspects of management of architectural firms, career management and decision-making.
CO2:	Awareness regarding Professional Ethics in Interior Design Practice
CO3:	Understand the legal basis for interior design practice, the role of interior designers in the design and construction process, and strategies to enhance leadership in the construction industry.

Course Contents

UNIT-I: THE INSTITUTIONAL FRAMEWORK

- Interior Designers – Role, Functions, Social Obligations, Profession Activities, Responsibilities etc.
- Institute of Indian Interior Designers – History, Scope, Objectives, Role and Function in promoting Interior Design profession and education.

UNIT-II: INTERIOR DESIGN PRACTICE

- Interior Design Practice – Type of Practices, Setting office, Office Organization, Management, Income Tax, Service Tax etc.
- Valuation - Purpose, Objective, Types and Method of valuation.
- Complaints, Arbitration and Conciliation

UNIT-III: PROFESSIONAL CONDUCT

- Duties, Responsibilities and Liabilities of Client, Interior Designers, Contractor and their mutual relationship.
- Conditions Governing the Appointment of Interior Designers, Scale of Professional charges, Execution of work and payment of fee.
- Professional Ethics & Conduct
- Copy Right Act as Applicable to Interior Design work.

SCHOOL OF PLANNING & ARCHITECTURE • CHITKARA

Prof. Atul Dutta
Dean –Interior Design

Chitkara School of Planning & Architecture