

**SEMESTER –II**

| <b>COURSE: URBAN DESIGN STUDIO-II</b>  |   |             |           |
|--|---|-------------|-----------|
| Course Code:   | 22UDC21   | CIE Marks   | 50        |
| Teaching hours /Week (L:P:SDA)   | 2:8:0   | SEE Marks   | 50        |
| Total Hours of Pedagogy  | 10  | Total Marks | 100       |
| Credits  | 10  | Exam Hours  | Viva Voce |
| <p><b>Course Learning Objectives:</b></p> <p>The overall goal of this studio shall be to incorporate and test ideas inculcated in the parallel streams of theories and principles. Objectives shall be; 1. To identify and categorize various non formal issues which are relevant in the process of designing an urban environment 2. To understand the process of making a physical planning proposal viable with available techniques of financing and feasibility 3. To understand the role of various interest groups in the realization of urban design scheme.</p>  |   |             |           |
| <p><b>Studio Outline</b></p> <ol style="list-style-type: none"> <li>1. The studio shall begin with documenting implemented urban design as a case in understanding the process followed in each of schemes. Documentation shall be intensive exercises with teams of two who will identify the project (across India) and illustrate the entire process of design as well review the present status of the project and realization of stated objectives.</li> <li>2. The main studio project shall be chosen within an area of a city (or even a small city) which is undergoing rapid changes triggered by an identifiable event or policy. The studio shall debate the needs of conserving the overall character of the chosen area with an in depth analysis on the social- cultural issues. Design of the proposed built element shall be preceded by a comprehensive urban design scheme which shall be detailed.</li> <li>3. Projects like; Tourism development; Conservation of Natural and Built Heritage; intervention in an urban area which has not been able to maintain its cultural moorings due to market forces shall be attempted.</li> </ol> |   |             |           |
| <b>Teaching Learning Process</b>   | Lecture sessions, Site visits, Student presentations, Group discussions and presentation, Periodic Reviews, Workshops are part of the Teaching Learning Process |             |           |

### Assessment Details (Both CIE and SEE)

Assessment Details (both CIE and SEE) The weight age of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**Continuous Internal Evaluation:** Continuous Internal Evaluation will be based on Internal Reviews, External Reviews and Final studio report and individual project Submission/VIVA VOCE

**Semester End Examination:** Viva-voce: The viva voce shall be conducted for a duration of 20 minutes (per student) for the subjects listed under viva voce for all the semesters

### Suggested learning Resources

1. The Kinetic City & Other Essays, Rahul Mehrotra, ArchiTangle GmbH; 2021
2. The art of building cities: Camillo Sitte
3. Indian cities: Annapurna Shaw Oxford University press
4. Contesting the Indian City: Global Visions and the Politics of the Local: Gavin Shatkin: Wiley Blackwell
5. Sacredscapes and Pilgrimage systems- editor Rana P B Singh-Shubhi Publications
6. housing & urbanization- Charles Correa
7. Urbanisation in early historic India-George Erdosy

|  |   |
|--|---|
| Web links and Video Lectures (e-Resources) | <ol style="list-style-type: none"> <li>1 <a href="https://www.youtube.com/watch?v=wJwZ0ID06NM">https://www.youtube.com/watch?v=wJwZ0ID06NM</a></li> <li>2 <a href="https://www.youtube.com/watch?v=gOGdL7uaBGc">https://www.youtube.com/watch?v=gOGdL7uaBGc</a></li> <li>3 <a href="https://www.youtube.com/watch?v=xc4ayMUxuD4">https://www.youtube.com/watch?v=xc4ayMUxuD4</a></li> <li>4 <a href="https://www.youtube.com/watch?v=vTLcxny7YSg">https://www.youtube.com/watch?v=vTLcxny7YSg</a></li> <li>5 <a href="https://www.youtube.com/watch?v=TV21eP0uu_0">https://www.youtube.com/watch?v=TV21eP0uu_0</a></li> <li>6. <a href="https://www.youtube.com/watch?v=ITTyzy1dZ8s">https://www.youtube.com/watch?v=ITTyzy1dZ8s</a></li> </ol> |
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### Skill Development Activities suggested

1. Study, research and place reading and representation techniques at region/city/precinct scale
2. Mapping the observation and inferring at region/city/precinct scale
3. Skills that enable analysis and identify the Urban design issues
5. Ability to program Urban design strategies and Design project

**Course outcome (Course skill set)**

**At the end of the course the student will be able to:**

| SI No | Description   | Blooms level |
|-------|---|--------------|
| CO1   | Able to identify urban study theme and the city   | IV           |
| CO2   | Engage with the place, people/stakeholders ,method of data collection/documentation of the practices/parameters that influences the city and built fabric | V            |
| CO3   | Able to Identify issues/conflicts that influence city and precinct  | V            |
| CO4   | Able to generate UD strategies at city and precinct scale   | VI           |
| CO5   | Urban Design intervention and design demonstration  | VI           |

**Program outcome of this course**

| SI No | Description  | POs      |
|-------|--|----------|
| 1     | Ability to read relate to theme and the city         | 1,2,8,9  |
| 2     | Ability to engage, interact and document the place   | 1,2,4,8  |
| 3     | Able to generate strategies to address the UD issues | 2,3,5    |
| 4     | Ability to demonstrate urban design solution         | 5,7,9,10 |

**Mapping of CO s and PO s**

|                | PO1        | PO2        | PO3        | PO4        | PO5        | PO6      | PO7        | PO8        | PO9        | PO10       |
|----------------|------------|------------|------------|------------|------------|----------|------------|------------|------------|------------|
| CO1            | 3          | 3          | 3          | 1          | -          | -        | 3          | 2          | 2          | 1          |
| CO2            | 3          | 3          | 2          | 2          | -          | 2        | 2          | 2          | 2          | 1          |
| CO3            | 2          | 3          | 3          | 1          | -          | -        | 1          | 2          | 3          | 2          |
| CO4            | 2          | 3          | 2          | 1          | 3          | 1        | 2          | 2          | 2          | 2          |
| CO5            | 1          | 2          | 2          | 2          | 3          | 2        | 2          | 2          | 2          | 3          |
| <b>Average</b> | <b>2.2</b> | <b>2.8</b> | <b>2.4</b> | <b>1.4</b> | <b>1.2</b> | <b>1</b> | <b>2.0</b> | <b>2.0</b> | <b>2.2</b> | <b>1.8</b> |

**Graduate attributes**

| Know ledge | Analyti cal skills | Applicati on of research | Applicatio n of latest technology and tools | Generate design/s olution | Ethics | Societa l concer n | Environ mental concer n | Collabo rative aptitud e | Opportunity for continued learning |
|------------|--------------------|--------------------------|---|---------------------------|--------|--------------------|-------------------------|--------------------------|------------------------------------|
| PO1        | PO2                | PO3                      | PO4   | PO5                       | PO6    | PO7                | PO8                     | PO9                      | PO10                               |

| Mapping correlation | Low | Medium | High | No |
|---------------------|-----|--------|------|----|
|                     | 1   | 2      | 3    | -- |

| <b>COURSE: URBAN CONSERVATION</b>   |   |             |     |
|---|---|-------------|-----|
| Course code:  | 22UDC22   | CIE Marks   | 50  |
| Teaching hours /Week (L:P:SDA)  | 2:1:2   | SEE Marks   | 50  |
| Total Hours of Pedagogy   | 4   | Total Marks | 100 |
| Credits   | 4   | Exam Hours  | 03  |
| <b>Course Learning Objectives:</b>  |   |             |     |
| The course is intended to introduce and to understand the various issues of urban conservation in terms of feasibility, community participation and heritage charters across the country.   |   |             |     |
| <b>Module-1</b>   |   |             |     |
| Introduction to conservation of historic and inner city areas. Concepts of conservation in India and Understanding INTEGRATED HERITAGE MANAGEMENT for historic cities.  |   |             |     |
| <b>Teaching Learning Process</b>  | Introduction to the course content through lectures and discussion                        |             |     |
| <b>Module-2</b>   |   |             |     |
| Socio-Economic development, Tourism Infrastructure Development, and role of Urban Design in Understanding of CULTURAL LANDSCAPES, SACRED CITIES.  |   |             |     |
| <b>Teaching Learning Process</b>  | Introduction to the course content through lectures and case study presentation           |             |     |
| <b>Module-3</b>   |   |             |     |
| Institutional aspects of Conservation- Charters, World heritage legislation and sites, Conservation Acts and legislation and available institutional frame work of conservation in India-New schemes of Government like HRIDAY for heritage cities, SMART CITIES.   |   |             |     |
| <b>Teaching Learning Process</b>  | Introduction to the course content through lectures, discussion, debate and presentation  |             |     |
| <b>Module-4</b>   |   |             |     |
| Conservation area practice, Adaptive Reuse, up gradation programs in old areas, infill design and regeneration of inner city areas.   |   |             |     |
| <b>Teaching Learning Process</b>  | Introduction to the course content through lectures, discussion, debate and presentation  |             |     |
| <b>Module-5</b>   |   |             |     |
| Conservation management, Community Participation, Economic Regeneration, Financing and Implementation of frame work for Redevelopment and Revitalization projects.  |   |             |     |
| Case studies in India and abroad to illustrate the above mentioned concepts and approaches-Introduction to World Heritage Sites and Site Management Plans   |   |             |     |
| <b>Teaching Learning Process</b>  | Introduction to the course content through lectures, discussion, debate and presentation. |             |     |
| <b>Assessment Details (Both CIE and SEE)</b>  |   |             |     |
| The weight age of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. |   |             |     |
| <b>Continuous Internal Evaluation:</b> Continuous Internal Evaluation will be based on assignments, group or individual assignment/ presentation and submission.  |   |             |     |
| <b>Semester End Examination:</b>  |   |             |     |
| Theory examination shall be held for 3-hour duration, students are expected to answer five full questions, one question from each module  |   |             |     |

**Suggested learning resources:**

1. Feildan Bernard, Conservation of Historic Buildings, Butterworth-Heinemann.
2. Fitch James, Historic Preservation- A Curatorial Approach, University Press of Virginia.
3. People-Centered Methodologies for Heritage Conservation: Exploring Emotional Attachments to Historic Urban Places (Critical Studies in Heritage, Emotion and Affect)by Rebecca Madgin and James Lesh
4. Equity in Heritage Conservation: The Case of Ahmadabad, India (Routledge Research in Architectural Conservation and Historic Preservation)by Jigna Desai
5. Sacredscapes and Pilgrimage systems- editor Rana P B Singh-Shubhi Publications.

**Web links and Video Lectures (e-Resources)**

- 1 <https://www.youtube.com/watch?v=W0GfpZPI1VM&t=3361s>
- 2 <https://www.youtube.com/watch?v=LpL8tuIJgHY>
- 3 [https://www.youtube.com/watch?v=\\_5sTNavbbeQ](https://www.youtube.com/watch?v=_5sTNavbbeQ)
- 4 [https://www.youtube.com/watch?v=Gath5\\_YVh8o](https://www.youtube.com/watch?v=Gath5_YVh8o)

**Skill development activities suggested**

1. Site/city visit and mapping the observation related to urban conservation
2. Policy/ guidelines related to urban heritage conservation and impact on built.
3. Application of conservation management practice and stakeholder

**Course outcome (course skill set)**

- Identify/Understand and demonstrate the policies/charters that influence urban fabric
- Understand the conservation and related aspects though national and international projects at various scale

**At the end of the course the student will be able to:**

| SI No | Description  | Blooms level |
|-------|--|--------------|
| CO1   | Various concepts conservation and heritage management in India                           | III          |
| CO2   | Indian heritage cities and Urban design approaches                                       | V            |
| CO3   | Analyze conservation policy and charters and its impact on built through case studies    | V            |
| CO4   | Able to identify various heritage conservation approaches to inner core of Indian cities | IV           |
| CO5   | Urban heritage management and various approaches   | V            |

**Program outcome of this course**

| SI No | Description  | POs      |
|-------|--|----------|
| 1     | Understand Heritage management concepts in conservation                          | 1,2      |
| 2     | Able to identify the scope of urban design in urban conservation                 | 2,4,7,9  |
| 3     | Familiarization of various concepts and approaches in conservation of urban core | 3,7,8,9  |
| 4     | Exposure to the policies related to management of heritage sites and plans       | 1,7,8,10 |

**Mapping of CO's and Po's**

|                | PO1        | PO2        | PO3        | PO4      | PO5      | PO6      | PO7        | PO8        | PO9        | PO10       |
|----------------|------------|------------|------------|----------|----------|----------|------------|------------|------------|------------|
| CO1            | 3          | 1          | 2          | -        | -        | -        | 1          | 1          | 1          | 1          |
| CO2            | 3          | 2          | 1          | -        | -        | -        | 2          | 2          | 3          | 2          |
| CO3            | 1          | 3          | 2          | -        | -        | -        | 2          | 2          | 2          | 3          |
| CO4            | 1          | 3          | 2          | -        | -        | -        | 2          | 2          | 2          | 2          |
| CO5            | 1          | 2          | 2          | -        | -        | -        | 2          | 1          | 1          | 2          |
| <b>Average</b> | <b>1.8</b> | <b>2.2</b> | <b>1.8</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1.8</b> | <b>1.6</b> | <b>1.8</b> | <b>2.0</b> |

| Knowledge | Analytical Skills | Application of Research | Application of latest technology /tools | Generate Designs/Solutions | Ethics | Societal Concern | Environmental concern | Collaborative aptitude | Opportunity for continued learning |
|-----------|-------------------|-------------------------|---|----------------------------|--------|------------------|-----------------------|------------------------|------------------------------------|
| PO1       | PO2               | PO3                     | PO4                                     | PO5                        | PO6    | PO7              | PO8                   | PO9                    | PO10                               |

**Graduate attributes**

| Mapping Co-relation | Low | Medium | High | No |
|---------------------|-----|--------|------|----|
|                     | 1   | 2      | 3    | -  |

| <b>COURSE: CONTEMPORARY THEORIES OF URBANISM AND ARCHITECTURE</b>   |   |             |     |
|---|---|-------------|-----|
| Course code:  | 22UDC23   | CIE Marks   | 50  |
| Teaching hours /Week (L:P:SDA)  | 2:1:0   | SEE Marks   | 50  |
| Total Hours of Pedagogy   | 3   | Total Marks | 100 |
| Credits   | 3   | Exam Hours  | 03  |
| <b>Course Learning Objectives:</b>  |   |             |     |
| To expose the students to the current theoretical trends in architecture and urbanism, with focus on Western architecture but with cross reference to Contemporary Indian trends using relevant examples.   |   |             |     |
| <b>Module-1</b>   |   |             |     |
| Post Modernism and post functionalism. Post script to the modern movement. Semiotics and structuralism. Post structuralism and Deconstruction. (Eg. Works of Robert Venturi, Robert Stern, Charles Moore, Peter Eisenman, Bernard Tschumi, Zaha Hadid, Daniel Libeskind and similar architects with examples.)  |   |             |     |
| Teaching Learning Process   | Introduction to the course content through lectures, discussion, debate and case study presentation |             |     |
| <b>Module-2</b>   |   |             |     |
| Urban theory after Modernism, Contextualism, Main Street and beyond. Collage city and towards the contemporary city.  |   |             |     |
| Teaching Learning Process   | Introduction to the course content through lectures and discussion.                                 |             |     |
| <b>Module-3</b>   |   |             |     |
| School of Venice, territory and architecture, an analogical architecture. Political and ethical agenda, the ethical function of architecture. (Vittorio Gregotti, Aldo Rossi).  |   |             |     |
| Teaching Learning Process   | Introduction to the course content through lectures, discussion and debate                          |             |     |
| <b>Module-4</b>   |   |             |     |
| Heidegger's thinking on architecture, a look at the phenomenology of architecture, Phenomenology and meaning of place. (Christian Norberg-Schulz, Juhani Pallasmaa, Spirit of Place and Indian temple towns and vernacular architecture).   |   |             |     |
| Teaching Learning Process   | Introduction to the course content through lectures, discussion, debate and presentation.           |             |     |
| <b>Module-5</b>   |   |             |     |
| Critical regionalism, local culture and universal civilization. Tectonic expression. Brief review of the issues of Gender in architecture. City design examples such as Lutyens Delhi, Chandigarh, Bhubaneswar, Shantiniketan and Relevance of Postmodern theory in India.  |   |             |     |
| Teaching Learning Process   | Introduction to the course content through lectures , discussion, debate and presentation.          |             |     |
| <b>Assessment Details (CIE and SEE)</b>   |   |             |     |
| The weight age of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. |   |             |     |

**Continuous Internal Evaluation:**

Continuous Internal Evaluation will be based on assignments, presentation and submission..

**Semester End Examination:**

Theory Examination shall be held for 3-hour duration, students are expected to answer FIVE full questions, one question from each module.

**Suggested learning resources:****Books:**

1. Kate Nesbit, Theorizing a new agenda for architecture, Princeton Architectural Press, 1996.
2. Michael Hayes, Architecture Theory since 1968, MIT Press, London.
3. Kevin Lynch, Good City Form, MIT Press, London.
4. Bernd Evers, Architectural Theory From Renaissance to the Present, Taschen, Cologne, 2002.
5. Geoffrey Broadbent, Emerging Concepts in Urban Space Design, Taylor & Francis, 1995
6. Jon Lang, Concise History of Modern Architecture in India, Permanent Black, 2010
7. Dr. Solomon Benjamin, Urban Informality
8. Shilpa Ranade, Gender and Space

**Web links and Video Lectures (e-Resources)**

<https://www.youtube.com/watch?v=nBUq21iahpl&t=23s>  
<https://www.youtube.com/watch?v=esPJRnKEyHU&t=11s>  
[youtube.com/watch?v=aW4LY3iHJal](https://www.youtube.com/watch?v=aW4LY3iHJal)  
<https://www.youtube.com/watch?v=0wLsMZ4tsQ&list=RDLVaW4LY3iHJal&index=5>  
<https://www.youtube.com/watch?v=jgBU3yJD5d4>  
<https://www.youtube.com/watch?v=8MK1vEQkego>  
<https://www.youtube.com/watch?v=YsNpJp4DKTw>

**Skill development activities suggested**

The following skills with respect to urban and built form:

- Critical Reading
- Presentation of analysis
- Identifying other relevant perspectives
- Critique of urban and built form

**Course outcome (course skill set)**

**At the end of the course the student will be able to:**

| SI No | Description( refer module outcome)5 module=5outcome | Blooms level |
|-------|---|--------------|
| CO1   | Assume a critical position                          | V            |
| CO2   | Identify theoretical lens of project or reading     | IV           |
| CO3   | Positional analysis of urban and built form         | V            |
| CO4   | Clarify perspectives of stakeholders                | III          |
| CO5   | Factors determining urban and built form            | VI           |

**Program outcome of this course**

| Sl. No. | Description   | POs      |
|---------|---|----------|
| 1       | Perspectives of Individual and the collective                 | 1,2,3    |
| 2       | Constructs linking urban and built form to other disciplines  | 2,3      |
| 3       | Identifying intentions and challenges of urban and built form | 3,4,7    |
| 4       | Implementing critique to urban and built form                 | 3,4,9,10 |



**Mapping of COs and POs**

|                | PO1        | PO2        | PO3        | PO4        | PO5      | PO6        | PO7        | PO8        | PO9        | PO10       |
|----------------|------------|------------|------------|------------|----------|------------|------------|------------|------------|------------|
| CO1            | 2          | 2          | 1          | -          | -        | 2          | 2          | -          | -          | 1          |
| CO2            | 3          | 3          | 2          | -          | -        | 1          | 2          | -          | 2          | 2          |
| CO3            | 1          | 3          | 2          | 2          | -        | 1          | 2          | 2          | 1          | 2          |
| CO4            | -          | 2          | 3          | 2          | -        | 1          | 2          | 1          | 2          | 3          |
| CO5            | -          | -          | 2          | 2          | -        | 1          | 1          | 1          | 2          | 2          |
| <b>Average</b> | <b>1.2</b> | <b>2.0</b> | <b>2.0</b> | <b>1.2</b> | <b>-</b> | <b>1.2</b> | <b>1.8</b> | <b>0.8</b> | <b>1.4</b> | <b>2.0</b> |

**Graduate attributes**

| Knowledge | Analytical skills | Application of research | Application of latest technology/tools | Generate design/solutions | Ethics | Societal concern | Environmental concern | Collaborative aptitude | Opportunity for continued learning |
|-----------|-------------------|-------------------------|--|---------------------------|--------|------------------|-----------------------|------------------------|------------------------------------|
| PO1       | PO2               | PO3                     | PO4                                    | PO5                       | PO6    | PO7              | PO8                   | PO9                    | PO10                               |

| Mapping co-relation | Low | Medium | High | No |
|---------------------|-----|--------|------|----|
|                     | 1   | 2      | 3    | -  |

| <b>COURSE: URBAN DESIGN POLICY AND IMPLEMENTATION</b>   |         |             |      |
|---|---------|-------------|------|
| Course code:  | 22UDS24 | CIE Marks   | 100  |
| Teaching hours /Week<br>(L:P:SDA)   | 2:1:0   | SEE Marks   | ---- |
| Total Hours of Pedagogy   | 3       | Total Marks | 100  |
| Credits   | 3       | Exam Hours  | ---- |
| <b>Course Learning Objectives:</b>  |         |             |      |
| This course will  |         |             |      |
| <ul style="list-style-type: none"> <li>- Emphasize the importance of integrating the urban design agenda into the city planning process and highlight the challenges of urban design practice in India.</li> <li>- Focus on illustrating methods and design tools to address and incorporate urban design in city planning, from the policy level to city plan and project implementation.</li> <li>- Understand the significance of the urban design visioning process, preparation of urban design strategies, policies, regulations and guidelines for plan and project implementation.</li> <li>- Discuss the influence of current and new innovative policies and development regulations on city structure, built form and urban space, using case examples.</li> <li>- Highlight the challenges of application of urban design policy and implementation mechanisms for urban design projects using examples from India and abroad.</li> </ul> |         |             |      |
| <b>Course Outline:</b>  |         |             |      |
| <b>1. Role of urban design in the city planning process and process for preparing urban design plans</b>  |         |             |      |
| <ul style="list-style-type: none"> <li>• Historic overview and case examples of current planning policies influencing urban design at regional and city scales; and</li> <li>• Role of visioning process in urban design plan preparation; analysis of issues and opportunities; and preparation of concept plans with objectives, policies and developmental strategies.</li> </ul>  |         |             |      |
| <b>2. Impact of land use zonal regulations on urban form and space and other innovative design tools</b>  |         |             |      |
| <ul style="list-style-type: none"> <li>• Analysis of impact of current land use and development regulations of Master Plans on urban form and space; and</li> <li>• Innovations in development regulations, alternative types of zoning and design tools including form based codes, performance zoning, incentive zoning and design review.</li> </ul>   |         |             |      |
| <b>3. Practical exercise to prepare an urban design framework and apply policies and design tools</b>   |         |             |      |
| <ul style="list-style-type: none"> <li>• Preparation of urban design / local level plans with a vision, concepts, and strategies in a given context; and</li> <li>• Role of applicable policies, design regulations, design guidelines and other tools and methods in preparing a framework for implementing a first order design intervention.</li> </ul>  |         |             |      |
| <b>4. Challenges of preparing an urban design framework</b>   |         |             |      |
| <ul style="list-style-type: none"> <li>• Impact of informality and temporality on regulating urban form and space; limitations of current planning framework; and</li> <li>• Understanding the role of urban design in the real estate development process.</li> </ul>  |         |             |      |
| <b>5. Project implementation strategies and modalities</b>  |         |             |      |
| <ul style="list-style-type: none"> <li>• Role of Government, private sector, CBOs / NGOs and other stakeholders;</li> <li>• Participatory design process and public engagement process; and</li> <li>• Project implementation process including preparation of short term and long term actions, strategies for financing, and operations and maintenance guidelines for design projects</li> </ul>   |         |             |      |

**Teaching Learning Process:**

- Lectures, videos and studio exercises to understand the parameters for urban design plan preparation
- Case studies, readings, discussions and class presentations on alternative types of design tools and their impact on urban form
- Practical exercises and group work to illustrate the process of preparing a framework for urban design implementation and testing the application of regulations and design tools
- Readings with case examples to discuss challenges of design in the real estate development process
- Case studies and critical review of implementation modalities of various urban design projects

**Assessment Details (CIE and SEE)**

The weightage of Continuous Internal Evaluation (CIE) is 100% and for Semester End Exam (SEE) is 0%. The minimum passing mark for the CIE is 50% of the maximum marks. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation).

**Continuous Internal Evaluation:**

Continuous Internal Evaluation will be based on weekly assignments, class presentations, participation in seminar discussions and term paper / report submission.

**Semester End Examination:** (not applicable)**Suggested learning resources:** (Includes but not restricted to the following)

## Books:

1. Barnett, Jonathan. Introduction to Urban Design, Icon (Harpe); 1st edition, 1982. ISBN: 978-0064303767.
2. Barnett, Jonathan. Urban Design as Public Policy, McGraw-Hill Inc.,US, 1974. ISBN: 978-0070037663.
3. Hall, Tony. Turning a Town Around: A Proactive Approach to Urban Design. Oxford, United Kingdom: Blackwell Publishing, 2008. ISBN: 978-1405170239.
4. Hosagrahar, Jyoti. Indigenous Modernities: Negotiating Architecture and Urbanism, Routledge 2005
5. Jacob, Alan. Making City Planning Work, American Planning Association, 1980. ISBN: 978-0918286123
6. Lang, Jon. Urban Design: A Typology of Procedures and Products. Oxford, United Kingdom: Architectural Press, 2005. ISBN: 978-0750666282.
7. Lehnerer, Alexander. Grand Urban rules (Rotterdam: 010 Publishers, 2009)
8. Lynch, Kevin. Managing the sense of a region, MIT Press, 1976
9. Tiesdell, Steve and Adams, David. Urban Design in the Real Estate Development Process. Wiley-Blackwell, 2011. ISBN: 978-1405192194
10. Tiesdell, Steve and Carmona, Mathew. Urban Design Reader, Routledge 2007
11. Bureau of Indian Standards. National Building Code, 2010.
12. Master Plans of Bangalore, New Delhi, Mumbai and other Indian cities.
13. Selected journal articles and readings

**Web links and Video Lectures(e-Resources):** (Includes but not restricted to the following)

1. Commission for Architecture and the Built Environment. Design Review, Principles and Practice, 2009. ([www.cabe.org.uk/files/design-review-principles-and-practice.pdf](http://www.cabe.org.uk/files/design-review-principles-and-practice.pdf))
2. In-formalised urban space design. Rethinking the relationship between formal and informal (<https://cityterritoryarchitecture.springeropen.com/articles/10.1186/s40410-016-0046-9>)
3. Patel, Shirish. Urban Layouts, Densities and the Quality of Urban Life (<https://www.epw.in/journal/2007/26/special-articles/urban-layouts-densities-and-quality-urban-life.html>)
4. Design Review: Principles and Practice ([https://www.designcouncil.org.uk/fileadmin/uploads/dc/Documents/Design%2520Review\\_Principles%2520and%2520Practice\\_May2019.pdf](https://www.designcouncil.org.uk/fileadmin/uploads/dc/Documents/Design%2520Review_Principles%2520and%2520Practice_May2019.pdf))
5. Incremental production of urban space: A typology of informal design. (<https://www.sciencedirect.com/science/article/pii/S019739751930877X>)

6. Excerpt from The Kinetic City & Other Essays: The Permanent and Ephemeral (<https://www.gsd.harvard.edu/2021/11/excerpt-from-the-kinetic-city-other-essays-the-permanent-and-ephemeral-by-rahul-mehrotra/>)
7. Tactical urbanism guidebook. (<https://www.mobiliseyourcity.net/tactical-urbanism-guidebook-gizmohua-india>)A. Srivathsan: 60 years of Planning – Lessons from Chennai, Urban Planning in India (<https://soundcloud.com/crdfpodcast/a-srivathsan-60-years-of-planning-lessons-from-chennai>)

**Skill development activities suggested**– Not Applicable

**Course outcome (course skill set)**

At the end of the course the student will be able to:

| Sl. No. | Description  | Blooms Level          |
|---------|--|-----------------------|
| CO1     | Understand the role of urban design in city planning and be well-versed with the urban design process works in practice  | I, II, III            |
| CO2     | Be conversant with strategic methods and design tools to incorporate urban design in city planning process and understand the pros and cons of the application of alternative design tools that shape built form and space | I, II, III, IV, V, VI |
| CO3     | Evaluate the environmental, social, economic, physical and political impact of development regulations and design tools on urban form, space and livability  | III, IV, V,           |
| CO4     | Apply policies, design tools and methods to prepare a framework for implementing a first order design intervention   | III, IV, V            |
| CO5     | Establish implementation strategies and modalities for urban design projects and understand the challenges of implementation   | I, II, III, IV, V, VI |

Blooms Levels:

I – Knowledge

II- Comprehension

III – Application

IV – Analysis

V – Synthesis

VI - Evaluation

**Program outcome of this course**

| Sl. No. | Description  | POs                           |
|---------|--|-------------------------------|
| 1       | Conversance with the <b>importance of integrating the urban design agenda</b> into the city planning process and the <b>challenges of urban design practice</b> in India.  | 1, 3, 6, 7, 10                |
| 2       | Conversance with <b>processes of urban design</b> such as visioning, preparation of urban design strategies and plans, and preparation of policies, regulations and guidelines <b>to develop a framework for a first order design intervention</b> | 1, 2, 3,4, 5, 6, 7, 8, 9, 10  |
| 3       | Exposure to application of <b>strategic methods and design tools</b> of urban design, from the policy level to city plan and project implementation  | 1, 2, 3, 4, 5, 7, 8, 10       |
| 4       | Understanding <b>the environmental, social, economic, physical and political impact</b> of development regulations and design tools on urban form, space and livability, and develop innovative design approaches                                  | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 |
| 5       | <b>Evaluating and reviewing implementation strategies and modalities</b> for urban design projects and understanding the <b>challenges of implementation</b> of urban design projects  | 1, 3, 5, 6, 7, 8, 9, 10       |

**Mapping of COs and POs**

|                | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 |
|----------------|------|------|------|------|------|------|------|------|------|-------|
| <b>CO 1</b>    | 3    | 2    | 2    | -    | -    | 3    | 2    | -    | 1    | 2     |
| <b>CO 2</b>    | 3    | 3    | 3    | 2    | 3    | 3    | 3    | 3    | 2    | 3     |
| <b>CO 3</b>    | 2    | 3    | 1    | 3    | 3    | 3    | 3    | 3    | 3    | 3     |
| <b>CO 4</b>    | 2    | 3    | 2    | 3    | 3    | 2    | 3    | 3    | 3    | 3     |
| <b>CO 5</b>    | 3    | 2    | 2    | 2    | 3    | 3    | 3    | 3    | 3    | 3     |
| <b>Average</b> | 2.6  | 2.6  | 2.0  | 2.0  | 2.4  | 2.8  | 2.8  | 2.4  | 2.4  | 2.8   |

**Graduate Attributes**

| Knowledge | Analytical skills | Application of Research | Application of latest technology / Tools | Generate Designs / Solutions | Ethics | Societal Concern | Environmental Concern | Collaborative Aptitude | Opportunity for continued learning |
|-----------|-------------------|-------------------------|--|------------------------------|--------|------------------|-----------------------|------------------------|------------------------------------|
| PO 1      | PO 2              | PO 3                    | PO 4                                     | PO 5                         | PO 6   | PO 7             | PO 8                  | PO 9                   | PO 10                              |

| Mapping Co-relation | Low | Medium | High | No |
|---------------------|-----|--------|------|----|
|                     | 1   | 2      | 3    | -  |

| <b>COURSE: ECOLOGY AND SITE PLANNING</b>  |   |             |     |
|---|---|-------------|-----|
| Course Code:  | 22UDS 25  | CIE Marks   | 50  |
| Teaching hours /Week (L:P:SDA)  | 2:1:0   | SEE Marks   | 50  |
| Total Hours of Pedagogy   | 3   | Total Marks | 100 |
| Credits   | 3   | Exam Hours  | 03  |
| <b>Course Learning Objectives:</b>  |   |             |     |
| To introduce students to the art of site planning and the concerns of environmental variables in the process of urban design.   |   |             |     |
| <b>Module-1</b>   |   |             |     |
| Introduction to physical geography; earth science; Geology, soil, Hydrology; Climate. Understanding, contours, slopes & its analysis. Role, of Terrain, watershed, catchment zone and its relation vegetation. Geographical regions. Study of natural and Manmade features of the site.                                     |   |             |     |
| Teaching Learning process   | Lectures supported with illustration and visuals.<br>Assignments to elaborate on key terms used with real time places and spaces. |             |     |
| <b>Module-2</b>   |   |             |     |
| Ecology: Basic concepts of ecology, components of ecosystem structure & environmental planning, use and management of resources; environmental concerns related to development; environmental degradation; pollution control and evaluation of energy resources. Man-environment interface towards sustainable development. |   |             |     |
| Teaching Learning process   | Presentation supported with movie clips and visuals.<br>Case study and site examples presentation/                                |             |     |
| <b>Module-3</b>   |   |             |     |
| Ecology and settlements, Sustainable urbanity and urban climate change: ECO URBANITY- Towards well-directed urbanity. Urban landscapes and Sustainable cities: Urban Biodiversity and ecology.  |   |             |     |
| Teaching Learning process   | Teaching by group discussions.<br>Presentation of reading material by students & debates.   |             |     |
| <b>Module-4</b>   |   |             |     |
| Site Planning: Site, User, Programme and Design. Sensed landscape and its materials, access, earth work and utilities. Field surveys, reading aerial survey, climatic variables. Site Planning strategies and case studies.   |   |             |     |
| Teaching Learning process   | Lectures supported with illustration and visuals.<br>Drawing and sketching exercises of the concepts discussed.                   |             |     |
| <b>Module-5</b>   |   |             |     |
| Application of site planning methods to design concepts, Analyzing the given Issue to show definition of site, User, & Program. Matching site qualities with program. Design of built & open spaces, recreation areas, landscape elements   |   |             |     |
| Teaching Learning process   | Design process interaction, drawing, sketching, and workshops.<br>Pin up reviews, jury comments                                   |             |     |

**Assessment Details (Both CIE and SEE)**

The weightage of Continuous Internal Evaluation (CIE) is 40% and for Semester End Exam (SEE) is 60%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

**Continuous Internal Evaluation:**

Continuous Internal Evaluation will be based on Assignments, Tests and Term Paper /Portfolio submission.

**Semester End Examination:**

Theory examination shall be held for 3-hour duration, students are expected to answer five full questions, one question from each module.

**Suggested learning Resources**

1. Kevin Lynch, Good City Form, MIT Press, Cambridge
2. Kevin Lynch and Gary Hack, Site Planning, MIT Press, Cambridge.
3. Peter Jacobs and Douglas Way, Visual Analysis of Landscape Development, Harvard Press.
4. Gary.O.Robinette (Ed), Landscape Planning and Energy Conservation. Van-Nostrand Reinhold.
5. Design with Nature: Ian L. McHarg.
6. The Landscape of Man: Geoffrey Jellicoe and Susan Jellicoe.
7. Geography of Settlements. *Author: R.Y. Singh. ISBN,*
8. Site Planning and Design Handbook. Thomas Russ (Author) / McGraw-Hill
9. RiverCentricUrban Planning Guidelines.TOWN AND COUNTRY PLANNING ORGANISATIONMINISTRY OF HOUSING AND URBAN AFFAIRSGOVERNMENT OF INDIA
10. Landscape Architecture, Fifth Edition: A Manual of Environmental Planning and Design

Web links  
and Video  
Lectures  
(e-  
Resources)

1. [https://cpwd.gov.in/cty/writereaddata/eventdoc/EVENTFILE\\_23092019050925.pdf](https://cpwd.gov.in/cty/writereaddata/eventdoc/EVENTFILE_23092019050925.pdf)
2. <https://www.cseindia.org/environmental-clearance---the-process-403>
3. <https://www.britannica.com/science/urban-ecosystem>
4. <http://environmentclearance.nic.in/writereaddata/FormB/agenda/29012020OA101ANJSupplementaryProceedingofSEACmeetingheldon26122019.pdf>
5. [https://books.google.co.in/books/about/Physical\\_Geography.html?id=wQgmjgEACA&redir\\_esc=y](https://books.google.co.in/books/about/Physical_Geography.html?id=wQgmjgEACA&redir_esc=y)

**Skill Development Activities suggested**

1. Observation of Natural setting to identify it as an outcome of, Geological, hydrological & climatic processes.
2. Bring to Note implications of ecology disturbances by human action in our current times.
3. Noting Good practices from Traditional knowledge as well New Research applications.
4. Learning from Awarded projects, workshops conducted.
5. Knowledge bank form Environmental laws, Legal cases, Critiquing Bye Laws.

**Course outcome (Course skill set)****At the end of the course the student will be able to:**

| SI No | Description   | Blooms level |
|-------|---|--------------|
| CO1   | Skill to observe Land and its Related ongoing Natural process on site.            | III          |
| CO2   | To understand Ecological Processes around Human settlements & their interrelation | VI           |
| CO3   | To Appreciate concepts of Sustainable cities: Urban Biodiversity and ecology      | VI           |
| CO4   | Getting conversant with issues related Landscape perception and its design tools. | IV           |
| CO5   | Site planning skills to Address issues of Site, User, Program.                    | III          |

**Program outcome of this course**

| SI No | Description   | POs     |
|-------|---|---------|
| 1.    | Expand understanding of site in the larger context of urban & natural environment.                  | 1,8,9   |
| 2.    | Be aware of the Contemporary issues man , nature conflict and its Implication on Both               | 1,2,7,8 |
| 3.    | Learn from Good practices, Dos &Don'ts,& use of new methods to solve the issues arising.            | 1,3,7,9 |
| 4     | Ability to find a balanced solution to a site planning exercise based on the parameters in question | 3,6,10  |

**Mapping of COs and POs**

|                | PO1        | PO2        | PO3        | PO4        | PO5        | PO6        | PO7        | PO8        | PO9        | PO10       |
|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| CO1            | 2          | 3          | 1          | -          | -          | 2          | 2          | 3          | 2          | 2          |
| CO2            | 2          | 3          | 2          | 2          | -          | 2          | 2          | 3          | 2          | 2          |
| CO3            | 1          | 2          | 3          | 2          | -          | 2          | 2          | 2          | 3          | 2          |
| CO4            | 1          | 2          | 3          | 3          | 2          | 1          | 2          | 2          | 3          | 2          |
| CO5            | -          | 2          | 2          | 3          | 3          | -          | 1          | 1          | 2          | 3          |
| <b>Average</b> | <b>1.2</b> | <b>2.4</b> | <b>2.2</b> | <b>2.0</b> | <b>1.0</b> | <b>1.4</b> | <b>1.8</b> | <b>2.2</b> | <b>2.4</b> | <b>2.2</b> |

**Graduate attributes**

| Knowl edge | Analytic al skills | Applicatio n of research | Application of latest technology and tools | Generate design/sol ution | Ethics | Societal concern | Environ mental concern | Collabor ative aptitude | Opportunity for continued learning |
|------------|--------------------|--------------------------|--|---------------------------|--------|------------------|------------------------|-------------------------|------------------------------------|
| PO1        | PO2                | PO3                      | PO4  | PO5                       | PO6    | PO7              | PO8                    | PO9                     | PO10                               |

| Mapping correlation | Low | Medium | High | No |
|---------------------|-----|--------|------|----|
|                     | 1   | 2      | 3    | -- |



| <b>COURSE: PUBLIC PARTICIPATION IN GOVERNANCE</b>   |   |             |      |
|---|---|-------------|------|
| Course code:  | 22UDE271  | CIE Marks   | 50   |
| Teaching hours /Week<br>(L:P:SDA)   | 1:0:2   | SEE Marks   | 50   |
| Total Hours of Pedagogy   | 2   | Total Marks | 100  |
| Credits   | 2   | Exam Hours  | VIVA |
| <b>Course Learning Objectives:</b>  |   |             |      |
| The course is intended to introduce concept of people's participation in urban design project.  |   |             |      |
| <b>Course outline</b>   |   |             |      |
| <ol style="list-style-type: none"> <li>1. Concept and importance of people's participation/planning, types and relevance, existing system and scope.</li> <li>2. Identification of stake holders, issues and interactions, institutionalization of people participation.</li> <li>3. Individual/NGO/CBO efforts in peoples planning with example, national and international.</li> <li>4. Role of urban designer in process of people participation in urban design project, example.</li> </ol>                                |   |             |      |
| <b>Teaching Learning Process</b>  | Introduce each subsection through talk/presentation, case study and generate discussion through article reading |             |      |
| <b>Assessment Details(CIE and SEE)</b>  |   |             |      |
| The weight age of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. |   |             |      |
| <b>Continuous Internal Evaluation:</b>  |   |             |      |
| Continuous Internal Evaluation will be based on presentation, interaction and submission.   |   |             |      |
| <b>Semester End Examination:</b> Viva-voce: The viva voce shall be conducted for a duration of 20 minutes (per student) for the subjects listed under viva voce for all the semesters   |   |             |      |
| <b>Suggested learning resources:</b>  |   |             |      |
| <ol style="list-style-type: none"> <li>1. Partha Chatterjee, the Politics of the Governed, New York: Columbia University Press, 2004.</li> <li>2. Report-seminar on good urban governance new Delhi 2001-2002, Nagarapalika journal, reports etc.</li> </ol>  |   |             |      |
| <b>Web links and Video Lectures(e-Resources):</b>   |   |             |      |
| <a href="https://www.youtube.com/watch?v=-vojtrw9Ys">https://www.youtube.com/watch?v=-vojtrw9Ys</a><br><a href="https://www.youtube.com/watch?v=tACf-kiuHwU">https://www.youtube.com/watch?v=tACf-kiuHwU</a><br><a href="https://www.youtube.com/watch?v=P8u5YQYv0d8">https://www.youtube.com/watch?v=P8u5YQYv0d8</a><br><a href="https://www.youtube.com/watch?v=hFDCCrySV9A">https://www.youtube.com/watch?v=hFDCCrySV9A</a>  |   |             |      |
| <b>Skill development activities suggested</b>   |   |             |      |
| <ol style="list-style-type: none"> <li>1. Field visit to enable students to identify conflicts related to governance</li> <li>2. Stakeholders and their roles</li> <li>3. Manage and conduct of public/stakeholders participation meet</li> </ol>   |   |             |      |

**Course outcome (course skill set)**

At the end of the course, the student will be able to:

| Sl. No. | Description   | Blooms Level |
|---------|---|--------------|
| CO1     | The application of people participation in the existing system      | III          |
| CO2     | Role of NGOs and stakeholders in people participation               | III          |
| CO3     | Need for the people participation in making of Urban Design project | VI           |

**Program outcome of this course**

| Sl. No. | Description  | POs      |
|---------|--|----------|
| 1       | Able to relate various people planning systems and opportunities                       | 1,3,9,10 |
| 2       | Ability to identify stakeholders and manage peoples planning activities                | 2,6,7    |
| 3       | Relate and integrate the people planning approach while making of Urban Design project | 4,9,10   |

**Mapping of COs and Pos**

|             | PO1        | PO2      | PO3      | PO4      | PO5       | PO6      | PO7        | PO8        | PO9        | PO10       |
|-------------|------------|----------|----------|----------|-----------|----------|------------|------------|------------|------------|
| <b>CO1</b>  | 3          | 2        | 2        | -        | -         | 2        | 2          | 2          | 3          | 3          |
| <b>CO2</b>  | 1          | 3        | 2        | -        | -         | 2        | 3          | 2          | 2          | 2          |
| <b>CO3</b>  | 1          | 1        | 2        | -        | 2         | 2        | 3          | 3          | 3          | 2          |
| <b>Avg.</b> | <b>1.6</b> | <b>2</b> | <b>2</b> | <b>-</b> | <b>.6</b> | <b>2</b> | <b>2.6</b> | <b>2.3</b> | <b>2.6</b> | <b>2.3</b> |

**Graduate Attributes**

|               |                       |                                |   |                                 |        |                     |                              |                            |   |
|---------------|-----------------------|--------------------------------|---|---------------------------------|--------|---------------------|------------------------------|----------------------------|---|
| Knowl<br>edge | Analytic<br>al skills | Applicati<br>on of<br>research | Application<br>of latest<br>technology<br>and tools | Generate<br>design/sol<br>ution | Ethics | Societal<br>concern | Environ<br>mental<br>concern | Collaborativ<br>e aptitude | Opportunity<br>for<br>continued<br>learning |
| PO1           | PO2                   | PO3                            | PO4   | PO5                             | PO6    | PO7                 | PO8                          | PO9                        | PO10  |

| Mapping<br>Co-relation | Low | Medium | High | No |
|------------------------|-----|--------|------|----|
|                        | 1   | 2      | 3    | -  |

| <b>COURSE: URBAN MANAGEMENT</b>   |   |             |      |
|---|---|-------------|------|
| Course Code:  | 22UDE272  | CIE Marks   | 50   |
| Teaching hours /Week (L:P:SDA)  | 1:0:2   | SEE Marks   | 50   |
| Total Hours of Pedagogy   | 3   | Total Marks | 100  |
| Credits   | 2   | Exam Hours  | VIVA |
| <b>Course Learning Objectives:</b>  |   |             |      |
| The course intends to help students understand and illustrate the complex challenges in the functioning of a city and develop their skills in addressing such complexities through efficient management of resources in the Urban Environment.  |   |             |      |
| <b>Studio outline</b>   |   |             |      |
| <p>Introduction: the students are introduced to Complexity theory and its relevance in urban planning, urban design (in creating city image) and other relevant management disciplines. The theory stresses the overlay of city management players such as the economy, infrastructure, people and nature. Topics such as sustainability and equity are introduced as a result of effective and efficient management system. The course will introduce theoretical understanding with case studies and encourage students to hands on experience under the following urban systems.</p> <ol style="list-style-type: none"> <li>1. People and the city: Human resource management – The role of people or citizens as primary stakeholders in managing a city, importance and relevance of participatory decision making explained through case studies. Theory of Informality and its associations with the city’s life. Topics such as Livelihood, health, well-being and quality of life as prescribed by world organizations and a comparative analysis drawn to sensitize on India’s scenario. The systems that involve fundamentals and effective management of Human resources in urban area including HR policies and Laws.</li> <li>2. Nature and the city: Natural resource management system – sustainability beyond greening, green Urbanism, urban form and sustainability, and other relevant topics that discuss the efficient and effective use of natural resources, significant stake holders in play and management strategies that recognizes developmental pressures, its impact on nature to suggest resilient solutions.</li> <li>3. Economy and the city: Urban finance management system - Understand fundamentals of urban finance, Effective and efficient budget in ULBs, financial planning and management. Understand the economic flows that bind development needs and people-centric solutions through case studies across the world. Assess India’s scenario by dissecting into concepts of “competitiveness” and “Happiness”</li> <li>4. Urban project management system: Holistic management with equal importance even to the role of people/citizens, the natural systems of the context and the financial as well the development trajectories that trigger largely in decision making. Assessing Time management modules through evaluation and monitoring of ongoing small and large scale urban projects.</li> </ol> |   |             |      |
| Teaching learning process   | Lectures with case studies, Student discussions, Peer reviews, Workshops, Action Planning as a sub-course to procure real time data for ongoing urban challenges. |             |      |
| <b>Assessment Details (Both CIE and SEE)</b>  |   |             |      |
| The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) or Term Work (TW) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE i.e., TW is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE(Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.  |   |             |      |

SEE(Semester End Examination): The viva voce shall be conducted for a duration of 20 minutes (per student) for the subjects listed under viva voce for all the semesters

**Suggested learning resources:**

1. Portugali, J. (2011). *Complexity, cognition and the city* (pp. 22-42). Berlin: Springer.
2. Bettencourt, L. M. (2015). Cities as complex systems. *Modeling complex systems for public policies*, 217-236.
3. Bettencourt, L. M. (2021). Introduction to urban science: evidence and theory of cities as complex systems.
4. Ahluwalia, I. J. (2014a). Improving our cities through better governance. London, England: LSE Cities
5. Ahluwalia, I. J., Kanbur, R., & Mohanty, P. K. (2014). *Urbanisation in India: Challenges, opportunities and the way forward*. New Delhi, India: Sage India
6. World Bank. (2012). *Lessons from business plans for Maharashtra, Rajasthan, Haryana and international good practices*. Washington, DC: Author.
7. Brosius, J.; Peter Tsing; Anna Lowenhaupt; Zerner, Charles (1998). "Representing communities: Histories and politics of community-based natural resource management". *Society & Natural Resources*.
8. Batty, M., & Marshall, S. (2012). The origins of complexity theory in cities and planning. In *Complexity theories of cities have come of age* (pp. 21-45). Springer, Berlin, Heidelberg.
9. Batty, M. (2016). Complexity in city systems: Understanding, evolution, and design. In *A planner's encounter with complexity* (pp. 99-122). Routledge.
10. Scott, A. & Storper, M., 2007. Regions, Globalization, Development. *Regional Studies*, 41(1), 191.
11. Campbell, S. (1996). Green cities, growing cities, just cities?: Urban planning and the contradictions of sustainable development. *Journal of the American Planning Association*, 62(3), 296-312.
12. Florida, R. (2005). THE WORLD IS SPIKY Globalization has changed the economic playing field, but hasn't leveled it. *Atlantic monthly*, 296(3), 48.
13. Feiock, R. C., Jae Moon, M., & Park, H. J. (2008). Is the world "flat" or "spiky"? Rethinking the governance implications of globalization for economic development. *Public Administration Review*, 68(1), 24-35.
14. Montgomery, C. (2013). *Happy city: Transforming our lives through urban design*. Penguin UK.
15. Lehmann, S. (2011). What is green urbanism? Holistic principles to transform cities for sustainability. *Climate Change-Research and Technology for Adaptation and Mitigation*, 243-266.

**Web Links and Video lectures (E-resources):**

1. Poli-Plex-Icon: A tool for city image visualization in the age of complexity by Efrossyni Tsakiri in *The Urban Transcripts journal*, Volume 2, No.2, June 2020.
2. <https://journal.urbantranscripts.org/article/poli-plex-icon-a-tool-for-city-image-visualization-in-the-age-of-complexity-efrossyni-tsakiri/>
3. E-article on Bettencourt and Sahasranaman attempt the first detailed analysis of Indian cities as complex systems. March 14, 2019. journal article topic: Urban geography and scaling of contemporary Indian cities. <https://miurban.uchicago.edu/2019/03/14/bettencourtsahasranaman/>
4. Wilensky, U. (2007). NetLogo Urban Suite - Cells model. <http://ccl.northwestern.edu/netlogo/models/UrbanSuite-Cells>. Center for Connected Learning and
5. Computer-Based Modeling, Northwestern University, Evanston, IL.
6. The happy city experiment | Charles Montgomery | TEDxVancouver | 2014 <https://www.youtube.com/watch?v=7WiQUzOnA5w>
7. Fight of the Century - Keynes vs. Hayek - Round One (2010) and Two (2012)
8. <https://www.youtube.com/watch?v=d0nERTFo-Sk&t=392s>
9. <https://www.youtube.com/watch?v=LA1-1DlhuXU&t=298s>

10. Complexity, citizen engagement in a Post-Social Media time | David Snowden | TEDxUniversityofNicosia | 2018. <https://www.youtube.com/watch?v=JkJDyPh9phc>

11. TEDxRotterdam - Igor Nikolic - Complex adaptive systems | 2010. [https://www.youtube.com/watch?v=jS0zj\\_dYeBE](https://www.youtube.com/watch?v=jS0zj_dYeBE)

Skill development suggested:

1. Skills to understand cities as complex adaptive systems and decode the complex layers in the working of a city i.e., the economic, the physical, the social and the environmental.
2. Skills to prepare surveys for assessing urban issues/real time data as part of action planning.
3. Skills to map the stakeholders in play, the governance strategies arising from the complex layers and assessing them.
4. Access, analyze and interpret data to provide recommendation.

**Course outcome (course skill set)**

At the end of the course the student will be able to:

| Sl. No | Description   | Blooms level |
|--------|---|--------------|
| CO1    | Identify and decode the complex layers of the urban challenges/issues     | IV           |
| CO2    | Identify and map the roles and responsibilities of key stakeholders       | IV           |
| CO3    | Generate methodologies in data collection, sampling and survey techniques | V            |
| CO4    | Analyze and assess the data collected                                     | V            |
| CO5    | Provide strategic planning techniques to address the issues and recommend | VI           |

**Program outcome of this course**

| Sl. No | Description   | POs          |
|--------|---|--------------|
| 1      | Ability to understand complex layers in the management of a city              | 1,2,3,7,8,10 |
| 2      | Ability to comprehend the inter-relatedness of the layers, networks and flows | 2,3,4,9      |
| 3      | Documentation of identified challenges and the layers                         | 2,3,4,9      |
| 4      | Analysis to provide strategies and solutions                                  | 2,3,4,5,6,9  |

**Mapping of CO s and PO s**

|                | PO1        | PO2        | PO3        | PO4        | PO5        | PO6        | PO7        | PO8        | PO9        | PO10       |
|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| CO1            | 3          | 2          | 3          | 1          | -          | 1          | 2          | 2          | 1          | 2          |
| CO2            | 2          | 2          | 3          | 1          | -          | 1          | 2          | 2          | 3          | 1          |
| CO3            | 1          | 3          | 2          | 3          | 2          | 2          | 1          | 1          | 3          | 2          |
| CO4            | 2          | 3          | 2          | 3          | 1          | 2          | -          | -          | 2          | 2          |
| CO5            | 1          | 2          | 2          | 3          | 3          | 2          | 2          | 2          | 2          | 2          |
| <b>Average</b> | <b>1.8</b> | <b>2.4</b> | <b>2.4</b> | <b>2.2</b> | <b>1.2</b> | <b>1.6</b> | <b>1.4</b> | <b>1.4</b> | <b>2.2</b> | <b>1.8</b> |

**Graduate attributes**

|            |                    |                          |   |                           |        |                  |                        |                         |                                    |
|------------|--------------------|--------------------------|---|---------------------------|--------|------------------|------------------------|-------------------------|------------------------------------|
| Know ledge | Analyti cal skills | Applicati on of research | Applicatio n of latest technology and tools | Generate design/ solution | Ethics | Societal concern | Environ mental concern | Collabor ative aptitude | Opportunity for continued learning |
| PO1        | PO2                | PO3                      | PO4   | PO5                       | PO6    | PO7              | PO8                    | PO9                     | PO10                               |

|                     |     |        |      |    |
|---------------------|-----|--------|------|----|
| Mapping correlation | Low | Medium | High | No |
|                     | 1   | 2      | 3    | -- |

| <b>COURSE: GIS (GEOGRAPHICAL INFORMATION SYSTEMS) -II</b>  |          |             |      |
|--|----------|-------------|------|
| Course Code:   | 22UDE273 | CIE Marks   | 50   |
| Teaching hours /Week (L:P:SDA)   | 0:2:0    | SEE Marks   | 50   |
| Total Hours of Pedagogy  | 2        | Total Marks | 100  |
| Credits  | 2        | Exam Hours  | VIVA |
| <b>Course Learning Objectives:</b>   |          |             |      |
| <p>The course is intended to understand GIS as a decision-support tool in the urban spatial planning process. The prerequisite to this course is GIS-I in the previous semester. GIS II deals with an understanding of advanced GIS concepts, advanced GIS models, techniques and real-world applications in spatial planning. The course also introduces Geographic Query and Analysis, Application in an Urban project and provides a glimpse of the future of GIS.</p> <p>It also establishes a bridge between the conceptual realms - Architecture /Site - Terrain Analysis/ Landscape architecture/Urban Design and Urban planning. The Output is digital, online and printed maps.</p> <p>Outcome: Students will complete lab exercises using any good Spatial information systems software. This will help in creating maps and output of spatial queries in the urban context.</p> |          |             |      |
| <b>Course outline</b>  |          |             |      |
| <b>Advanced-Data Models</b>  |          |             |      |
| <p>Surface representation, Grid model, other models, Practical observations – Accuracy, Three-dimensional objects, Representation of time.</p> <p>Network model, Model for movement over surfaces, Combination of models, representation of networks, Node-node adjacency matrix, Computation of shortest paths on a network and Terrain Analysis.</p>   |          |             |      |
| <b>Geographic Query and Analysis</b>   |          |             |      |
| <p>Types of spatial analysis - Queries and reasoning, Measurements, Transformations. Optimization techniques, Hypothesis testing, Spatial interpolation- Inverse distance weighting, Density estimation and potential, Advanced spatial analysis.</p> <p>Descriptive summaries–Centers, Dispersion, Histograms and pie charts, Scatter plots, Spatial dependence as a correlation method.</p>  |          |             |      |
| <b>The Future of GIS</b>   |          |             |      |
| <p>Future data: Easy access to digital data, Remote sensing and GIS, GPS as a data source for GIS. Image maps and GIS, Data exchange and GIS. Location-based services and GIS.</p> <p>Future hardware – The workstation revolution, The network revolution, The microcomputer revolution, The mobility revolution, The impact of the revolutions, prospects of hardware, Future software – Software trends. The raster versus vector debate, object-oriented GIS, Distributed databases, GIS user needs, and GIS software research.</p> <p>GIS interoperability, Future issues and problems – Privacy, Data ownership, Scientific visualization, New focus.</p>  |          |             |      |
| <b>Creating Reports</b>  |          |             |      |
| <p>Definition, components of web GIS, internet, web GIS v/s Internet GIS, Sharing Work, and Publishing Maps over intranet/Internet, collaborative web mapping, Web Mapping Services, Open Layers, and Google maps.</p>   |          |             |      |

|   |  |                      |
|---|--|----------------------|
| <b>Urban Project</b>  |  |                      |
| Application of GIS through an URBAN Project taken from the previous semester.   |  |                      |
| Teaching learning process   | Introduction of the course through lectures.<br>Major areas of application through lectures, videos, field data collection and hands-on on the software. |                      |
| <b>Assessment Details (Both CIE and SEE)</b>  |  |                      |
| Assessment Details (both CIE and SEE) The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum mark. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% of the total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together. |  |                      |
| <b>Continuous Internal Evaluation:</b> Continuous Internal Evaluation will be based on Exercises, Projects, and Seminars<br><b>Semester End Examination:</b> Viva Voce/TW.  |  |                      |
| <b>Suggested learning resources:</b>  |  |                      |
| <ol style="list-style-type: none"> <li>1. Anita Graser, "Learning QGIS" PAKT open source, 2016.</li> <li>2. Dr. John Van Hoesen, Dr. Luigi Pirelli, Dr. Richard Smith Jr., GISP Kurt Menke, " A refreshing look at QGIS: "Mastering QGIS", PACKT Pub., 2016.</li> <li>3. <b>Discovering GIS and ArcGIS</b> by Bradley A. Shellito.</li> </ol>   |  |                      |
| <b>Web Links and Video lectures (E-resources):</b>  |  |                      |
| <a href="https://sites.duke.edu/envgis/tutorials/introduction-to-google-earth/">https://sites.duke.edu/envgis/tutorials/introduction-to-google-earth/</a>   |  |                      |
| <b>Skill development suggested:</b>   |  |                      |
| Site Visits, hands-on various software like Global Mapper, QGIS, cross domains with emerging architectural trends in Geospatial Industry  |  |                      |
| <b>Course outcome(Course skill set)</b>   |  |                      |
| <b>At the end of the course the student will be able to:</b>  |  |                      |
| <b>Sl.No</b>  | <b>Description</b>   | <b>Blooms Level</b>  |
| CO1   | Understanding 3D Model with Terrain Analysis.  | I                    |
| CO2   | Working with advanced spatial analysis techniques.   | II                   |
| CO3   | Understanding the Future scope of geographic information systems like GIS.   | III                  |
| CO4   | Working with web mapping services other than GIS.  | IV                   |
| CO5   | Working on an Urban project using GIS and outcome through spatial queries.   | V                    |
| <b>Program outcome of this course</b>   |  |                      |
| <b>Sl No</b>  | <b>Description</b>   | <b>POs</b>           |
| 1   | Understand mapping and Spatial analysis as crucial tools in data analysis of the Urban scenario.   | 1, 2, 4, 10          |
| 2   | Analyzing urban scenarios project using Geographical information system.   | 1, 2, 3, 4, 9,10     |
| 3   | Spatial analysis of various types of data using advanced spatial analysis techniques.  | 1,2, 3,4, 5,7, 9, 10 |



**Mapping of CO s and PO s**

|                | PO1        | PO2        | PO3        | PO4        | PO5        | PO6        | PO7        | PO8      | PO9        | PO10       |
|----------------|------------|------------|------------|------------|------------|------------|------------|----------|------------|------------|
| CO1            | 3          | 2          | 2          | 3          | 1          | -          | -          | -        | 2          | 2          |
| CO2            | 3          | 3          | 3          | 2          | 2          | -          | 1          | 1        | 1          | 3          |
| CO3            | 2          | 1          | -          | 1          | -          | 2          | 1          | 2        | 2          | 2          |
| CO4            | -          | 2          | 2          | 3          | -          | 1          | 1          | 1        | 3          | 1          |
| CO5            | 3          | 3          | 2          | 2          | 3          | -          | 1          | 1        | 3          | 3          |
| <b>Average</b> | <b>2.2</b> | <b>2.2</b> | <b>1.8</b> | <b>2.4</b> | <b>1.2</b> | <b>0.6</b> | <b>0.8</b> | <b>1</b> | <b>2.2</b> | <b>2.2</b> |

**Graduate attributes**

|               |                          |                                |  |                                 |        |                     |                              |                               |   |
|---------------|--------------------------|--------------------------------|--|---------------------------------|--------|---------------------|------------------------------|-------------------------------|---|
| Know<br>ledge | Analyti<br>cal<br>skills | Applicati<br>on of<br>research | Applicatio<br>n of latest<br>technology<br>and tools | Generate<br>design/s<br>olution | Ethics | Societal<br>concern | Environ<br>mental<br>concern | Collabor<br>ative<br>aptitude | Opportunity<br>for<br>continued<br>learning |
| PO1           | PO2                      | PO3                            | PO4  | PO5                             | PO6    | PO7                 | PO8                          | PO9                           | PO10  |

|                     |     |        |      |    |
|---------------------|-----|--------|------|----|
| Mapping correlation | Low | Medium | High | No |
|                     | 1   | 2      | 3    | -- |

