Semester- III

HABITAT DESIGN STUDIO-III (NEW EXTENSIONS TO EXISTING CITY)			
Course Code	MAHD301	CIE Marks	50
Teaching Hours/Week (L:P: SDA)	2:6:1	SEE Marks	50
Total Hours of Pedagogy	8	Total Marks	100
Credits	8	Exam Hours	-

Course Learning objectives:

- Studio intent is to sensitize students to dynamics of conceiving and implementing new urban development.

Studio Outline

The project involves a new development/extension to an existing city.

- A realistic project to be identified with specific client (Real or Imaginary) requirement.
- The project should involve large site area, population, and complexity of functions.
- Geographical settings and siting, Assessment of site resources- Analysis through Ecological theories and processes. Study of Geomorphology, Physiography, Geology, Hydrology, Vegetation and Wildlife.
- Study of existing settlements in the influence area, importance of Social Impact Assessment.
- Documenting Cultural resources, Heritage Districts and Monuments.
- Urban open space systems, green networks.
- Infrastructure Assessment and planning- Road Networks, Site Grading and Drainage, Sewerage, Water Supply and Electricity.
- Legal aspects of land ownership, Planning and Development tools.
- Stakeholder engagement.
- Development Strategy- Funding, Cost Recovery Systems, Project formulation, Phasing and Infrastructure Development.

Project should conclude in a detailed master plan demonstration.
Site Study to be carried out in groups and interventions to be submitted individually.

Integrated Studio Course (ISC)

Urban Governance:

1. Concepts of urban governance, overlapping of territory, various stakeholders, and their role in the city.
2. Infrastructure and finance aspects of local administration.

Assessment Details (both CIE and SEE)

For Professional Studio Core Course Integrated with the theories/software relating to the studio. The theory part of the ISC shall be evaluated by CIE with regular assignment. The studio part shall be evaluated by both CIE & SEE (Viva-Voce with the external examiner).

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 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

1. Seminars, Assignments, and Studio Discussions for ISC component.
2. Two Internal Reviews, two External Reviews and Final Portfolio Submission for Studio component.

Semester End Examination:

Viva-voce: The viva voce shall be conducted in two phases, firstly for the group work followed by Viva Voce for individual interventions. Weightage ratio of 80:20.

Suggested Learning Resources:

Books

1. C.A. Doxiadis, "Ekistics", Oxford University Press, 1st edition, 1968.
2. Le Corbusier, "Towards a new Architecture", Martino Fine Books, 2014.
3. David Bell & Mark Jayne, "Small Cities - Urban Experience beyond the Metropolis", Routledge, 1st Edition, 2006.
4. Peter Bosselmann, "Representation of Places - Reality and Realism in City Design", University of California Press, 1998.
5. Cecilia Tacoli-, "Rural Urban Linkages", Routledge; 1st Edition, 1996.
6. Christa van Santen, "Light Zone City - Light Planning in the Urban Context", Birkhauser, 1st Edition, 2006.
7. Givoni B, "Climate and Urban Design", New Age International Private Limited; 2nd Edition, 2012.
8. Ian McHarg, "Design with Nature", John Wiley & Sons, 1995.
9. Geoffrey Broadbent, "Emerging concepts in Urban Space Design", Taylor & Francis, 1st Edition, 1995.

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Web links and Video Lectures (e-Resources):

1. https://unhabitat.org/sites/default/files/2020/10/wcr_2020_report.pdf
2. https://www.worldbank.org/en/topic/urbandevelopment/overview
3. https://transportgeography.org/contents/chapter8/urban-land-use-transportation/urban-expansion/
4. https://doi.org/10.1016/j.apm.2016.08.002
5. https://www.wri.org/insights/world-resources-report-towards-more-equal-city-framing-opportunities-and-challenges

Skill Development Activities Suggested

1. Mapping and evaluation techniques for extension of settlements/ new settlements.
2. Method/ Technique of Social Impact Assessment.
3. Formulating Development Guidelines.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	To assess conditions to site new habitats & augment infrastructure	V
CO2	Generate Masterplan and Development guidelines for the new habitat	V
CO3	Develop humane habitats through sensitive design approaches	VI
CO4	Devise implementation mechanism for proposed new development	VI
CO5	Evaluate the impact of development	VI

Program Outcome of this course

Sl. No.	Description	POs
1	Ability to assess and augment extension of settlement fabric	2, 3, 4, 6, 7, 8
2	Evolve new habitat systems	2, 3, 4, 5 6, 7, 8
3	Generate project implementation mechanism	3, 5, 9, 10
4	Ability to assess implication of new settlements	2, 3, 6, 7, 8

Mapping of COs and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	3	3	2	-	-	2	2	3	2
CO2	2	2	2	2	3	1	1	1	1	1
CO3	2	3	2	3	3	2	2	2	1	1
CO4	2	2	2	2	3	2	2	2	2	2
CO5	1	3	1	2	3	2	3	3	2	2
Average	**1.8**	**2.6**	**2.4**	**2.2**	**2.4**	**1.4**	**2**	**2.4**	**1.8**	**1.6**

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
PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**

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

DISSERTATION PHASE 1			
Course Code	MAHD302	CIE Marks	100
Teaching Hours/Week (L:P:SDA)	0:3:1	SEE Marks	-
Total Hours of Pedagogy	3	Total Marks	100
Credits	3	Exam Hours	-

Course Learning objectives:

- The course aims to conduct research exploration focused on a specific theme or topic related to Habitat Design, with the objective of guiding the progression towards the Dissertation project.

Course outline

To initiate students into the dissertation process, emphasizing the creation of an Individual Project focused on the Habitat Design theme. Students will select a research topic, formulate research questions and commence a thorough investigation.

Students to develop their research based on the research components:

1. **Research Problem:** Defining the central issue and aims of the research.
2. **Research Objectives:** Establishing specific goals that the research endeavours to accomplish.
3. **Literature Review:** A systematic review of existing literature relevant to the research problem. To establish a theoretical framework, identify gaps in previous research and provide justification for the new study.
4. **Case Studies:** Examining real-life instances to supplement research findings and provide contextual insights.
5. **Hypotheses:** Developing predictive statements suggesting relationships between variables, guided by theoretical insights or observations.
6. **Research Methodology Formulation:** Creating a structured approach for conducting the research, encompassing data collection and analysis methods.
7. **User Groups and Stakeholders Identification:** Identifying individuals or entities with a vested interest in or impacted by the research outcomes.
8. **Study Site/Area Selection:** Identifying relevant locations pertinent to the chosen theme or topic for research investigation.
9. **Secondary Data Collection :** Gathering and scrutinizing data to derive insights and draw conclusions in line with the research objectives.
10. **Report Formulation.**

NOTE:

- **Two seminars to be given by each student.**
- **Student shall submit a concise report on the selected topic of study along with detailed synopsis of the project selected for Dissertation.**

Assessment Details: Methods of CIE need to be defined topic wise i.e.- assignments and Project work)
The weightage of Continuous Internal Evaluation (CIE) is 100% and there is no Semester End Exam (SEE.)
The student has to obtain a minimum of 50% in CIE to pass. Based on the CIE marks grading will be awarded.

Continuous Internal Evaluation:

1. Methods suggested: Submission of assignments, studio discussion, reviews and seminars on regular basis.
2. The course faculty has to decide the assignments and topics based on their respective research topics.
3. CIE marks to be awarded at the end of semester and to be uploaded to VTU portal.

Suggested Learning Resources:

Books

1. 'Doing your Master's Dissertation' by Chris Hart
2. 'Visual Research Methods in Design' by Sanoff H
3. 'Research Design in Urban Planning: A Student's Guide' by Stuart Farthing
4. 'Doing Research in Urban and Regional Planning' by Diana MacCallum, Courtney Babb & Carey Curtis
5. 'Design Research for Urban Landscapes-Theories and Methods' by Martin Prominski & Hille Seggern
6. 'Architectural Research Methods' by Linda Groat & David Wang

Web links and Video Lectures (e-Resources):

1. https://swayam.gov.in/nc_details/NPTEL
2. https://dmc.engr.wisc.edu/self-study-courses/
3. https://www.coursera.org/search?query=urban%20planning
4. https://www.library.illinois.edu/cpla/theses/mturp/
5. http://shodhbhagirathi.iitr.ac.in:8081/jspui/handle/123456789/108

Skill Development Activities Suggested

1. Formulating research questions and developing hypotheses.
2. Data collection methods and ethical considerations.
3. Literature Review methods and synthesizing findings.
4. Technical writing and presentation seminars.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Recall foundational principles and theories relevant to habitat design	I
CO2	Interpret and summarize existing literature, theoretical frameworks and case studies in habitat design	II
CO3	Utilizing design principles and techniques to develop innovative habitat design proposals	III
CO4	Analyse and critique existing habitat designs, identifying strengths, weaknesses and opportunities for improvement	IV
CO5	Assess the effectiveness of habitat design solutions in addressing aims and objectives	V
CO6	Creation of framework for the identified theme/topic to progress into Dissertation-II Project	VI

Program Outcome of this course

Sl. No.	Description	POs
1	Identify aspects of human habitat which require critical investigation.	1,2,6,7,10
2	Comprehensive understanding of relationship between habitat components.	2,3,4,7,8,10
3	Formulating systematic approach to investigate habitat related issues.	3,4,5,6,7,8
4	Acquire the research and methodological skills required to conduct independent investigations effectively.	2,3,4,5,7,8,10

Mapping of COS and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	1	-	-	-	1	1	1	2	3
CO2	2	3	3	2	2	2	3	3	1	3
CO3	2	3	3	3	3	2	3	3	-	3
CO4	2	3	2	1	-	-	3	2	-	3
CO5	2	3	3	1	-	1	1	1	-	2
CO6	3	3	3	2	2	2	2	2	-	3
Average	**2.3**	**2.7**	**2.8**	**1.8**	**2.3**	**1.6**	**2.2**	**2**	**1.5**	**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
PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10

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

INDUSTRY INTERNSHIP			
Course Code	MINT385	CIE Marks	50
Teaching Hours/Week (L:P:SDA)	-	SEE Marks	50
Total Hours of Pedagogy	-	Total Marks	100
Credits	7	Exam Hours	-

Course Learning objectives:

- To acquire hands-on experience and insight into various facets of professional practice within the industry.
- To apply theoretical knowledge acquired through academic coursework to real-world professional settings within the industry.

Course Outline:

Students are expected to work in firms handling projects of following nature:

1. Urban Infill Projects.
2. Urban Brown Field Projects.
3. Revitalization projects of neglected or deteriorating parts of city.
4. Development of Settlement Master plan.
5. Heritage Habitat Preservation and Conservation.
6. Waterfront Redevelopment Project.
7. Smart City Initiatives.
8. Disaster Resilience Planning.
9. Public Realm Planning.
10. Large scale Housing projects.
11. Transportation and mobility related projects.
12. Formulation of guidelines for urban design projects.
13. Large-scale endeavours such as Layout Designs, Housing Complexes, Mixed-Use Developments, Campus Master Plans that encompass multiple structures and Site Planning.

The student is expected to acquaint themselves in the design decision making process concerning urban issues and parameters in the design process.

The student is expected to familiarize themselves with the following:
a) Administration of office b) Soliciting and obtaining projects c) Client meetings d) Site visits
e) Drawings and detailing f) Design process and presentation. g) Stake-holder engagement

For the viva-voce exam, the following need to be presented by the student:
a) Statement indicating the various types of works completed by the student in the firm.
b) Daily log maintained by the student.
c) Drawings/ Reports of projects on which the student has worked.
d) Photographs of project sites.
e) Any other material in support of student's involvement in the work.

Internship duration of **Three months** (12 weeks) of industry internship. This includes 8 weeks during the vacation following the end of 2nd semester and 4 weeks of internship from the commencement of 3rd semester.

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 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 daily log, reports, drawings and Final Portfolio Submission.

Semester End Examination:

Viva-voce: The viva voce shall be conducted for a duration of 20 minutes (per student)

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Recall terminology, principles and concepts learned in academic coursework	I
CO2	Understand the theoretical foundations, functions and operations of industry	II
CO3	Apply theoretical knowledge to practicality and projects	III
CO4	Assess the impact of external factors, market trends, ground realities and monitoring changes on industry operations	IV
CO5	Critique the industry-related policies, initiatives, strategies and solutions	V
CO6	Generate inventive design solutions that surpass conventional norms and contribute to the advancement of practice	VI

Program Outcome of this course

Sl. No.	Description	POs
1	Practical experience in industry through hands-on involvement in real-world projects.	2,4,5,6,7,8,9,10
2	Exposure to various aspects of practice, including project management, client communication and collaboration with multidisciplinary teams.	1,2,6,9,10
3	Insight into the professional standards, ethical considerations and regulatory requirements	1,2.6.7.8.10
4	Enhanced readiness for careers in the field by acquiring practical skills	2,3,4,5,6

Mapping of COS and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	**3**	**-**	**-**	**-**	**-**	**2**	**2**	**2**	**-**	**-**
CO2	**3**	**3**	**-**	**-**	**-**	**2**	**-**	**-**	**2**	**3**
CO3	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**1**	**3**
CO4	**2**	**3**	**1**	**1**	**-**	**2**	**3**	**3**	**3**	**3**
CO5	**2**	**3**	**-**	**-**	**-**	**3**	**1**	**1**	**1**	**3**
CO6	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**2**	**3**	**3**
Average	**2.5**	**2.8**	**2.3**	**2.3**	**3**	**2.2**	**2**	**2**	**2**	**3**

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
PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**

Mapping Co-relation	Low	Medium	High	No
	1	**2**	**3**	**_**

LANDSCAPE AND ECOLOGY IN HABITAT SYSTEMS			
Course Code	MAHD313A	CIE Marks	100
Teaching Hours/Week (L:P:SDA)	1:2:0	SEE Marks	-
Total Hours of Pedagogy	3	Total Marks	100
Credits	3	Exam Hours	-

Course Learning objectives:

- Role of landscape in evolution of habitat systems.
- Comprehend approaches to evolve sustainable habitats and realise impact of development on environment.
- Understand the role of ecosystem services in habitat systems.

MODULE 1

INTRODUCTION TO LANDSCAPE AND LANDSCAPE DYNAMICS

- Elements of Landscape and their integration in urban habitat systems.
- Changing landscapes in urban and rural realms.
- Relation between Landscape and ecological systems.
- Landscape and urban form: Past, present, and future.

MODULE 2

CONCEPTS AND PRICIPLES OF ECOLOGY

- Concepts of settlement ecology- Overview of ecological principles, Nature as the primary layer in the development process.
- Ecosystem Services and integration in urban habitat systems.
- Threats to Ecosystem and habitats.

MODULE 3

HUMAN HABITAT, PUBLIC HEALTH, AND THE ENVIRONMENT

- Introduction to habitat systems, Cities as centres of consumption of land, water, energy resources and forest cover.
- Formal and Informal Settlements: Dependencies on Ecological systems, challenges, and issues.

MODULE 4

ECOLOGICAL FOOTPRINT:

- Land capacity, impact of development on ecosystem related to energy and resource depletion.
- Urban Metabolism-Preliminary Concepts: Linear to Circular.

MODULE 5

PRACTICES IN PROTECTION AND CONSERVATION OF LANDSCAPE IN URBAN HABITATS

- Mitigation and adaptation towards Climate Crisis in cities.
- Integrating Disaster Management and building resilience through participatory and inclusive methods.
- Understanding Green Infrastructure network and its implications through case studies.

Assessment Details: Methods of CIE need to be defined topic wise i.e.- assignments and Project work)
The weightage of Continuous Internal Evaluation (CIE) is 100% and there is no Semester End Exam (SEE.)
The student has to obtain a minimum of 50% in CIE to pass. Based on the CIE marks grading will be awarded.

Continuous Internal Evaluation:

1. Methods suggested: Submission of assignments on regular basis.
2. The course faculty has to decide the assignments and topics based on the modules.
3. CIE marks to be awarded at the end of semester and to be uploaded to VTU portal.

Suggested Learning Resources:

Books

1. Molles, M. C. (2015). Ecology: Concepts and Applications (7th ed.). McGraw-Hill Education.
2. McHarg, I. L. (1995). Design with Nature. Wiley.
3. Dramstad, W. E., Olson, J. D., & Forman, R. T. T. (1996). Landscape Ecology Principles in Landscape Architecture and Land-Use Planning. Island Press.
4. Srivastav, A., & Srivastav, S. (2004). Ecological Meltdown: Impact of Unsustainable Human Activities on the Environment. APH Publishing Corporation.
5. Saxena, H. M., & Khan, M. Z. A. (2012). Urbanization, Environmental Degradation & Quality of Life. Rawat Publications.
6. Fraker, H. (2013). The Hidden Potential of Sustainable Neighborhoods: Lessons from Low-Carbon Communities. Island Press.

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7. Gupta, A., & Asher, M. G. (1998). Environment & the Developing World: Principles, Policies & Management. Wiley.
8. Bicknell, J., Dodman, D., & Satterthwaite, D. (Eds.). (2009). Adapting Cities to Climate Change: Understanding and Addressing the Development Challenges. Earthscan.Designing Greenways: Sustainable Landscapes for Nature and People, Second Edition by Paul Cawood Hellmund and Daniel Smith.

Web links and Video Lectures (e-Resources):

1. https://nptel.ac.in/courses/127106004
2. https://www.youtube.com/watch?v=lAvsymBnwug
3. https://www.youtube.com/watch?v=Ay4GmV8FOmA
4. https://www.youtube.com/watch?v=6h0dpQmCRmE
5. https://www.youtube.com/watch?v=aWPghGzsjOA

Skill Development Activities Suggested

1. Reading and interpreting EIA reports
2. Understanding provisions in legal frameworks regarding environmental rights through study of judicial cases related to environment.
3. Analyse case studies and real-world examples of successful conservation efforts, considering both biological and socio-economic factors.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Analyse the role of Landscape elements in the urban habitats	IV
CO2	Analyse the ecological impacts due to human interventions & importance of circular systems	IV
CO3	Interpret various ecological layers in each site to propose informed solutions	V
CO4	Evaluate environmental management strategies and participatory method	IV

Program Outcome of this course

Sl. No.	Description	POs
1	Ability to assess the significance of ecological layer in defining the nature of habitat	2,3,4,6,7,8
2	Ability to understand the relationship between environmental systems and liveability	1,2,3,6,7,8,10
3	Assess climate change challenges in eco-systems and habitats and evaluate suitable responses	1,2,3,4,5,6,7,10
4	Assess the role of ecosystem services in habitat systems.	1,3,6,8,9,10

Mapping of COS and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	2	2	1	3	2	3	3	3
CO2	3	3	2	2	1	3	2	3	3	3
CO3	3	3	2	1	3	3	2	3	3	3
CO4	3	3	2	2	3	3	3	3	3	3
Average	3	3	2	1.75	2	3	2.25	3	3	3

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
PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10

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

ENVIRONMENTAL PLANNING SYSTEMS			
Course Code	MAHD313B	CIE Marks	100
Teaching Hours/Week (L:P:SDA)	1:2:0	SEE Marks	-
Total Hours of Pedagogy	3	Total Marks	100
Credits	3	Exam Hours	-

Course Learning objectives:

- To Understand fundamentals of environmental planning and integration of environmental sustainability into habitats through policy, planning, and management of environmental systems.

Module-1

INTRODUCTION TO URBAN CLIMATE

- Introduction to Urban climate and heat island.
- Soils, plant communities, ecosystem, ecology, and succession.

Module-2

URBAN FORESTRY

- Urban Forestry, agriculture, and urban greening, green infrastructure and smart cities.
- Landscape ecology, Habitat Conservation Planning.
- Endangered Species Act, Biodiversity conservation.
- Ecosystem planning processes.

Module-3

WATER MANAGEMENT

- Fundamentals of surface and groundwater hydrology.
- Integrating water and planning, such as stormwater management, source water/ groundwater protection, residential water conservation, water supply management.
- Water pollution control, and Clean Water Act compliance.

Module-4

URBAN ENVIRONMENTAL PLANNING

- Challenges of urbanization, Sustainable urban development, Environmental Concepts – Sustainability and Environmental Carrying Capacity.
- Strategies in Land use, Transportation.
- Infrastructure Planning and Management - Generation and Evaluation of Alternatives -Decision Methods- Mitigation and Environmental Management Plan

Module-5

ENVIRONMENTAL SYSTEMS AND ENVIRONMENTAL IMPACT ASSESSMENT

- Key concepts and terminology for understanding environmental systems. Scientific fundamentals needed to understand professional documents, legal requirements, and planning best practices.
- Introduction to EIAs, Purpose and Importance of EIAs, Key Components of EIAs, Legislation and Policy Framework

Assessment Details: Methods of CIE need to be defined topic wise i.e.- assignments and Project work)
The weightage of Continuous Internal Evaluation (CIE) is 100% and there is no Semester End Exam (SEE.)
The student has to obtain a minimum of 50% in CIE to pass. Based on the CIE marks grading will be awarded.

Continuous Internal Evaluation:

1. Methods suggested: Submission of assignments on regular basis.
2. The course faculty has to decide the assignments and topics based on the modules.
3. CIE marks to be awarded at the end of semester and to be uploaded to VTU portal.

Suggested Learning Resources:

Books

1. John Randolph. 2012. Environmental Land Use Planning and Management, Second Edition.
2. Merchant, Carolyn. 1994. Ecology: Key Concepts in Critical Theory, Humanities Press, New Jersey.
3. Bicker, Alan, Paul Sillitoe and Johan Pottier. 2004. Development and Local Knowledge: New Approaches to Issues in Natural Resources Management, Conservation and Agriculture. Routledge, London & New York.

Web links and Video Lectures (e-Resources):

1. https://archive.nptel.ac.in/courses/120/108/120108004/
2. https://onlinecourses.nptel.ac.in/noc21_hs83/preview
3. https://onlinecourses.nptel.ac.in/noc21_ge16/preview
4. https://archive.nptel.ac.in/courses/127/105/127105018/

Skill Development Activities Suggested

1. Evaluate policies & legal framework for environmental management.
2. Mapping of blue -green network in an urban environment.
3. Strategy Formulation for urban disaster mitigation.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Understanding key laws and regulations that regulate urban environmental. management	III
CO2	Analysing how to apply scientific principles to plan and review process	IV
CO3	Understanding professional domains that work in urban environmental planning	V
CO4	Understanding environmental Impact Assessment	V

Program Outcome of this course

Sl. No.	Description	POs
1	Integration of environmental sustainability into habitats from the perspective of environmental planning, and management	1, 2, 6, 7,10
2	Acquire data skills to be able to environmentally characterize sites.	1 ,2, 6 ,7, 8,10

Mapping of COS and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	**3**	**1**	**-**	**1**	**-**	**2**	**2**	**1**	**1**	**3**
CO2	**2**	**3**	**2**	**1**	**1**	**2**	**2**	**-**	**-**	**3**
CO3	**3**	**1**	**2**	**1**	**2**	**2**	**2**	**2**	**1**	**3**
Average	**2.6**	**1.6**	**1.3**	**1**	**1.2**	**2**	**2**	**1**	**1.2**	**3**

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
PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10

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

STRATEGY MANAGEMENT AND IMPLEMENTATION OF PROJECTS			
Course Code	MAHD313C	CIE Marks	100
Teaching Hours/Week (L: P: SDA)	1:2:0	SEE Marks	-
Total Hours of Pedagogy	3	Total Marks	100
Credits	3	Exam Hours	-

Course Learning objectives:

- To aid the student in development of strategic vision, setting out objectives, formulating and implementing strategies.

Module-1

Concepts of Strategic Planning:

- Principles, techniques, and study of various models in strategy management.
- Concepts, value of vision, mission and corporate objectives, the role of corporate governance and stakeholder management, coherence in strategic direction.
- Design Perspective- Tactical planning, Deployment of resources.
- Arriving at goals and metrics.

Module-2

History and Theory of strategic planning:

- Understanding the classic theories and frameworks involved in the project.
- Understand different options of implementation plan through case studies and best practices.
- Principles, techniques, and study of various models.

Module-3

Policy Perspective- policies, program, and rules.

- Role and significance of strategies in Urban project planning and development.
- Principles behind arriving at goals and metrics.

Module-4

Risks and mitigation methods:

- Exploring the risks and other resistance for the project and ways to address them.
- Measures to stay informed and respond to trends in competition and technology while not losing sight of the strategic objective. Deployment of Technological assistance in strategic application.

Module-5

Strategic evaluation of the project- Analysis and assessment.

- Strategic evaluation of the project- Analysis and assessment
- Design Perspective- Tactical planning, Deployment of resources.
- Understand the gap in implementation. Phasing and scenario planning for implementation modules.
- Players and mechanisms in urban project planning; Organizational chart. Financial strategies in Urban project developments.

Assessment Details: Methods of CIE need to be defined topic wise i.e.- assignments and Project work)
The weightage of Continuous Internal Evaluation (CIE) is 100% and there is no Semester End Exam (SEE.)
The student has to obtain a minimum of 50% in CIE to pass. Based on the CIE marks grading will be awarded.

Continuous Internal Evaluation:

1. Methods suggested: Submission of assignments on regular basis.
2. The course faculty has to decide the assignments and topics based on the modules.
3. CIE marks to be awarded at the end of semester and to be uploaded to VTU portal.

Suggested Learning Resources:

Books

1. Michael Ball, Colin Lizieri, Bryan D. Macgregor, "The Economics of Commercial Property Markets", Routledge, 1st Edition, 1998.
2. Adrienne Schmitz, Deborah L Brett, "Real Estate Market Analysis: A Case Study Approach", Urban Land institute, 2nd Edition, 2001.
3. Mike E. Miles, Laurence M. Netherton, Adrienne Schmitz, "Real Estate Development: Principles and Process", Urban land institute, 5th Edition, 2015.
4. Prashant Das and Divyanshu Sharma, "Real Estate Finance in India", Sage Publications, 2013.
5. CA Madhukar Hiregang, CA Virender Chauhan, CA Sudhir V S and CA Roopa Nayak,"A Practical Guide to GST on Real Estate Industry" , Bloomsbury, 2019. Daniel Halpin and Ronald Woodhead, "Construction Management", Wiley, 2nd Edition, 1997.
6. Krishnamurthy and S.V.Ravindra, "Construction Management", CBS Publishers & Distributors Pvt. Ltd, 2nd Edition, 2017.

   Prasanna Chandra, "Projects Planning, Analysis, Selection, Financing, Implementation and Review", McGraw-Hill, 8th Edition, 2017.
8. L S Srinath, "PERT and CPR-Principles and Application", Affiliated East-West Press, 2001.
9. Harold Kerzner, "Project Management", Wiley, New York, 2003.
10. Chitkara, "Construction Project Management", Tata McGraw- Hill, New Delhi.

Kamaraju Ramakrishna, "Essentials of Project Management", PHI Learning, New Delhi, 2010.

Web links and Video Lectures (e-Resources):

1. https://archive.nptel.ac.in/courses/122/105/122105024/
2. https://archive.nptel.ac.in/courses/110/108/110108047/
3. https://onlinecourses.nptel.ac.in/noc22_mg89/preview
4. https://pll.harvard.edu/course/business-strategy-evaluating-and-executing-strategic-plan
5. https://www.coursera.org/learn/strategic-management

Skill Development Activities Suggested

1. Understanding the concept of corporate governance.
2. Understanding implementation plan through case studies and best practices.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Comprehend basic concepts of Strategy management.	III
CO2	Critically evaluate implementation plan of urban development projects.	V
CO3	Explore the classic theories and frameworks involved in the project.	VI

Program Outcome of this course

Sl. No.	Description	POs
1	Knowledge of best practices in strategy management	1, 2, 6, 7,10
2	Holistic approach to various models, perspectives, theories involved in strategic management.	2, 3, 4 ,7, 8
3	Analysis and assessment of implementation of urban projects	1, 2 , 7, 8 ,10

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Mapping of COs and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	2	1	-	1	2	3	-	2
CO2	2	3	3	2	-	1	2	3	-	2
CO3	2	2	3	3	1	1	2	3	1	2
Average	**2.3**	**2.3**	**2.6**	**2**	**0.3**	**1**	**2**	**3**	**0.3**	**2**

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
PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**

	Low	Medium	High	No
Mapping Co-relation	**1**	**2**	**3**	**_**

PROJECT PLANNING, ANALYSIS & APPRAISAL /EVALUATION			
Course Code	MAHD313D	CIE Marks	100
Teaching Hours/Week (L:P:SDA)	1:2:0	SEE Marks	-
Total Hours of Pedagogy	3	Total Marks	100
Credits	3	Exam Hours	-

Course Learning objectives:

- To introduce the students to methods of implementation and management of projects related to Urban Infrastructure.

Module-1

INTRODUCTION TO PROJECT PLANNING

- Introduction to terminologies and concepts of Project planning and formulation.
- Urban Projects: Scales, Institutions involved and their organization structure.
- Public relation and citizen participation: Personnel management, Manpower Planning, performance, appraisal, motivation and morale.
- Corporate Management: Systems approach to Urban Management, organizational design (Public Private Partnership in Urban Governance), Project Monitoring and Management, Management Information Systems.

Module-2

LEGAL TOOLS CONNECTED WITH URBAN PLANNING AND DEVELOPMENT

- Requirement Analysis, Feasibility Check and Techniques involved.
- Operational Analysis: Performance, Business, Environment, Infrastructure and Engineering Design, Scenario Setting.
- Identification and estimation of project impacts, Desirable and undesirable project impacts.
- Identifying costs and benefits, Pricing, Opportunity costs, Shadow Prices, Cash flow, Payback periods and Internal Rate of Return.

Module-3

METHODS OF PROJECT EVALUATION

- Single and multiple criteria project evaluations.
- Details of single Criteria cost -benefit analysis and its application with case studies.
- Concept of multi-criteria project evaluation and their applications: Concept of time scheduling, Project network and monitoring, PERT and CPM with their application in planning projects.
- Project monitoring under resource constraints, Urban risk and disaster management.

Module-4

LOCAL PLANNING AND BUDGETING

- Methods of Urban Finance: Financial perspective of Urban Development. Overview of municipal finance.
- Municipal accounts, Municipal Corporate Planning, Program Planning and Budgeting.
- Local Financial Management, Financial Control & Delegation, Value capture Financing, Performance evaluation techniques, Cash flow management, Local debt management, Financial Information System, Municipal fiscal programming.
- Project scheduling and budgeting.

Module-5

PROJECT IMPLEMENTATION PLAN

- Project Implementation Techniques and Phasing.
- Technical Aspects of cost, schedule and quality of deliverables. Environmental Impact Assessment (EIA)
- Human Aspects of Authority, orientation, Motivation and Group orientation.
- Risk Management and Execution Plans, resolving conflicts for Managing change, Problem solving and decision making.
- New methods, practices and technological advancements in project Implementation- Best Practices.

Assessment Details: Methods of CIE need to be defined topic wise i.e.- assignments and Project work)
The weightage of Continuous Internal Evaluation (CIE) is 100% and there is no Semester End Exam (SEE.)
The student has to obtain a minimum of 50% in CIE to pass. Based on the CIE marks grading will be awarded.

Continuous Internal Evaluation:

1. Methods suggested: Submission of assignments on regular basis.
2. The course faculty has to decide the assignments and topics based on the modules.
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Suggested Learning Resources:

Books

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3. Prasanna Chandra, "Projects Planning, Analysis, Selection, Financing, Implementation and Review", McGraw-Hill, 8th Edition, 2017.
4. L S Srinath, "PERT and CPR-Principles and Application", Affiliated East-West Press, 2001.
5. Harold Kerzner, "Project Management", Wiley, New York, 2003
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7. Kamaraju Ramakrishna, "Essentials of Project Management", PHI Learning, New Delhi, 2010.

Web links and Video Lectures (e-Resources):

1. https://onlinecourses.nptel.ac.in/noc23_ce59/preview
2. https://onlinecourses.nptel.ac.in/noc23_mg124/preview
3. https://www.coursera.org/learn/uva-darden-project-management
4. https://execed.gsd.harvard.edu/integrated-project-management
5. https://www.udemy.com/course/practitioners-guide-to-cost-benefit-analysis/
6. https://www.youtube.com/watch?v=W2EdffbwgcM&list=PLyqSpQzTE6M88imldbh5qcexw-qXNikWR
7. https://www.youtube.com/watch?v=iHSEXPazWEg

Skill Development Activities Suggested

1. Project Simulation: Use project management software or tools to simulate the planning and execution of a project to manage tasks, resources, and timelines in a controlled environment.
2. Risk Assessment - to identify potential risks in a project, assess their impact and develop risk mitigation strategies.
3. Time Management on effective time management techniques, such as creating Gantt charts, using productivity tools, and setting milestones.
4. Analysis of case studies: Urban projects feasibility and appraisal, Annual and Quarter Annual statements and Cash Flow statements.

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Familiarisation with project planning and analysis principles.	II
CO2	Develop comprehensive project proposals by defining project objectives, scope, and deliverables.	VI
CO3	Comprehend risk assessment , conflict resolution and management.	II
CO4	Familiarisation with project appraisal techniques.	V
CO5	Applying tools for social, economic and environmental impact towards sustainable project planning	III

Program Outcome of this course

Sl. No.	Description	POs
1	Exposes the students about comprehensive project planning skills	1,2,3,4,6,9,10
2	Sensitize the students on feasibility, appraisal, evaluation and regulatory compliance adhering to legal requirements and industry best practices.	1,2,4,5,7,8
3	Establish the corelation between Urban Planning, monitoring and implementation through urban governance, finance and human resource management in Urban Design.	1,3,4,9,10

Mapping of COS and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	1	2	2	-	1	2	2	3	3
CO2	1	3	2	2	3	1	1	1	3	3
CO3	3	3	1	1	-	1	1	1	-	2
CO4	3	3	2	-	-	-	2	2	1	2
CO5	3	3	3	1	1	1	3	3	3	3

Mapping of COS and POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	**3**	**1**	**-**	**1**	**-**	**2**	**2**	**1**	**1**	**3**
CO2	**2**	**3**	**2**	**1**	**1**	**2**	**2**	**-**	**-**	**3**
CO3	**3**	**1**	**2**	**1**	**2**	**2**	**2**	**2**	**1**	**3**
Average	**2.6**	**1.6**	**1.3**	**1**	**1.2**	**2**	**2**	**1**	**1.2**	**3**

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
PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**

	Low	Medium	High	No
Mapping Co-relation	**1**	**2**	**3**	**–**