School of Planning and Architecture, Vijayawada

(An Institution of National Importance under the Ministry of Education, Govt. of India)
S.No. 4/4, ITI Road, Vijayawada – 520008, Andhra Pradesh, India

Course: **Elective I: Resource Conservation and Efficiency** Class: **I Sem. M. Arch. (SA) 2026-27 A.Y**
Instructors: **Prof. Dr. Amitava Sarkar** Contact Periods/week: **03 (55 min. each)** Timetable: **Monday**, **9:00 – 11.45 AM**
Internal Assessment Marks: **50** External Theory Exam: **50** Total Marks: **100**
Attendance: **75% Min.** Min. Passing Marks: **As per the Academic Ordinance and SPAV Regulations**

Objective:
To sensitize and equip the student with understanding on various natural resources, assessment and conservation techniques.

Outcomes:
1. Students shall learn about the resource conservation concepts, ideas and strategies that are applicable for designing efficient buildings.
2. Make appropriate choices for further studies in related domains of education.

S.No.	Week No.	TOPIC OF CLASS LECTURE & DISCUSSION	CLASS ACTIVITY & ASSIGNMENTS
1	***Week 1 24/08/2026***	**Unit 1: Introduction** • Energy Efficiency and Energy Conservation. • Recourse Consumption.	Lecture and Group Discussion
2	***Week 2 31/08/2026***	**Unit 1:** • Distribution of Energy use in India. • Factors affecting the Energy use in Buildings. • Pre-Building Stage, Construction Stage & Post Occupancy stages.	**Assignment-I on "Case Studies of Environmental issues in cities"**
3	***Week 3 07/09/2026***	**Unit 2: Types of natural resources** • Including human, material, economic etc. • Need for conservation of resources.	Lecture and Discussion
4	***Week 4 14/09/2026***	**Holiday-Ganesh Chaturthi** **Field Work / Case Study visits**	
5	***Week 5 21/09/2026***	**Unit 2:** • Carbon footprint assessment. • Concept of ecological capacity etc.	Lecture and Discussion
6	***Week 6 28/09/2026***	**Unit 3: Overview of Environmental Sciences** • Pertaining to the above, including assessments, mapping tools and methods. • Human interventions and ecosystem disturbances.	Lecture and Discussion
7	***Week 7 05/10/2026***	**Unit 3:** • Impact of human activities on natural resources, biodiversity and changing ecosystem cycles etc.	Lecture and Discussion
8	***Week 8 12/10/2026***	**Unit 4: Impacts on the Environment** • Local, regional and global impacts on the Environment. • Introduction to wasteland creation & barren land formation, soil erosion at regional level.	Lecture and Discussion
9	***Week 9 19/10/2026***	**Mid Semester Assessment**	**Internal Assessment – II**
10	***Week 10 26/10/2026***	**Unit 4:** • Kyoto Protocol, Paris Climate Change Agreement, etc. • India's climate change policy and stand.	**Submission of Assignment-I**
11	***Week 11 02/11/2026***	**Unit 4:** • Efficient utilization of recourses with case studies.	**Assignment-II on "Case Studies of Zero Energy Buildings"**
12	***Week 12 09/11/2026***	**Unit 5: Impacts of Urbanization** • On Ecology and Environment, Water management, waste and land management system.	Lecture and Discussion
13	***Week 13 16/11/2026***	**Unit 5:** • Application of GIS in Resource Conservation	Special Lecture and - Demonstration in GIS Lab

14	***Week 14 23/11/2026***	**Unit 5:** • Extreme Climate, Zero Energy Buildings, Carbon neutrality.	Lecture and Discussion **Submission of Assignment-II**
15	***Week 15 30/11/2026***	**Lecture, revision and feedback on the topics covered**	Lecture and Discussion

Tentative break-up of Internal Assessment Marks:

S.No.	Categories of Evaluation*	Marks
1	Assignment-I	10
2	Mid Semester Test	20
3	Assignment-II	20
	Total	**50**

** The Marks allotted against each category are tentative. Categories of evaluation are only indicative and may increase or decrease.*

Reference Books:

1. P.S. Ramakrishan (2002) Ecology and Sustainable Development: Working with Knowledge and System, National Book Trust.
2. Michal L McKinney, Robert M Schoch, Logan Yonavjak (2013) Environmental Sciences: System and Solutions, John and Barttett learning.
3. Ping Chi and Qiang Chien (2015) Climate Change and Sustainability, Delve Publishing.
4. P.N. Prasad (2010) Environmental Air Pollution: Causes, Effect and Control, Crescent Publishing Corporation.
5. Steve Goodhew, (2016), Sustainable Construction Process, Wiley.

Sd/-
Signature of Subject Teacher

Sd/-
Signature of Head of the Department