

**SCHOOL OF PLANNING AND ARCHITECTURE: VIJAYAWADA**

(An institution of National Importance under the Ministry of Human Resource Development, Govt. of India) R.S.No. 4/3, 5/3, 7/2, Beside Govt. Polytechnic College, I.T.I Road, Vijayawada, AP – 520008

**DEPARTMENT OF ARCHITECTURE**

**Course: Environmental Sciences (ARC-126) Ist Yr. II Sem. B.Arch, 2024-25 (Sec - A & Sec - B)**

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| Contact Hours : 03 hours per week (Time Table: Thursday) | Credits: 3 (2L +1T) |
| Internal Assessment: 50 Marks Externals Assessment: 50 Marks | Total Marks: 100 | Passing Marks:40% b o t h in Internal & External | Attendance: 75% Minimum |
| Coordinators: Dr. M. Banu Chitra, Ar. Hiba Abdulkader Thayyil |
| **Subject objectives:**The objectives of this subject are as follows:* To introduce the basics of environmental science and its relevance to mankind, the built envelope around.
* To introduce the fundamentals of Climatology in view of its integral importance for students of Architecture.
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| **Lecture Plan** |
| **Week No.** | **Topic (Lecture/Discussion)** | **Exercise/Assignment** |
| Week 1 | Overview of the syllabus and discussion of lecture plan. Adopting innovative methodologies for the subject. | Assignment 1- Analyse an Environmental Documentary Objective: Critically examine media's role in environmental education.Task: Watch a documentary (e.g., An Inconvenient Truth, Our Planet) and write a critique focusing on its effectiveness in raising awareness.Output: A review essay or presentation. |
| Week 2 | Unit 1: INTRODUCTION TO ECOSYSTEMNS AND ENVIRONMENT, ENVIRONMENTALRESOURCES – Types of ecosyst*ems, characteristics features, structure and**functions of Ecosystems.* | Submission and discussion of Assignment 1 |

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| Week 3 | Unit 1: INTRODUCTION TO ECOSYSTEMNS AND ENVIRONMENT, ENVIRONMENTALRESOURCES - *Forest, Grassland, Desert, Aquatic (lakes, rivers and estuaries). Land, Forest, Water and Energy as environmental resources.* | Lecture and Classroom Discussion |
| Week 4 | Unit II: BIO-DIVERSITY AND ITSCONSERVATION - *Value of bio-diversity**- consumptive and productive use, social, ethical, aesthetic and option values. Bio- geographical classification of India – India as a mega diversity habitat.* | Assignment 2- Biodiversity through comics Objective: Use a comic strip to creatively understand biodiversity's values, threats, and conservation.Task: Create a 6-8 frame comic strip on biodiversity topics and present it with a brief summary.Output: A completed comic strip and summary evaluated on creativity, clarity, and effort. |
| Week 5 | Unit II: BIO-DIVERSITY AND ITSCONSERVATION - *Threats to biodiversity-Hotspots, habitat loss, poaching of wildlife, loss of species, seeds etc. Conservation of bio-diversity, in-situ and ex-situ conservation.* | Submission and discussion of Assignment 2 |
| Week 6 | Unit III Environmental problems in India- *Local and Global Issues, Causes, effects and control measures of Air pollution, Indoor air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Solid waste management,**composting, vermin culture.* | Lecture and Classroom Discussion |
| Week 7 | Unit III Environmental problems in India- *Urban and Industrial wastes, recycling and re-use. Nature of thermal pollution and nuclear hazards, Global warming, Acid rain and Ozone layer depletion.* | Lecture and Classroom Discussion |
| Week 8 | Unit IV Social issues and Environment - *Social issues and the environment, from unsustainable to sustainable development, urban problems related to energy; human population and environment* | Assignment 3- Visual Storyboard: Human Impact on EnvironmentObjective: Visualize human-environment interactions. Task: Create a poster illustrating how human activities impact nature and how they can be mitigated. To be completed and submitted in class.Output: A creative and educational poster. |
| Week 9 | Unit IV Social issues and Environment *- population explosion, resource exploitation and depletion, human-wild conflict, loss of wet lands, mangroves, increasing desert areas,**spread of diseases.* | Lecture and Classroom Discussion |
| Week 10 | Unit V Institutions and Governance - *Introduction to Government regulations, Monitoring and enforcement of environmental regulations.* | Lecture and Classroom Discussion |

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| Week 11 | Unit V Institutions and Governance - *Introduction to Environmental Acts, viz., Water (Prevention and Control of Pollution) Act,* | Assignment 4- Environmental Acts Brochure Objective: Understand and summarize key provisions of theacts in a concise, engaging format.Task: Research the acts, analyze key provisions, and design a visually appealing brochure.Output: A well-designed brochure summarizing the key provisions of the acts. |
| Week 12 | Unit V Institutions and Governance - *Air Prevention and Control of pollution act, Environmental Protection Act, Wild life protection Act, Forest Conservation Act, etc.* | Submission and discussion of Assignment 4 |
| Week 13 | Review of all Assignments | Students will work and improve the assignments. |
| Week 14 | Discussion on the Government Policies and methods of implementation and their problems for the society. | Ground survey on the activities with final report. |
| Week 15 | Final submission of the Schemes and Policies and new method to adept the Policies during the discussion. | Lecture and Classroom Discussion |
| Week 16 | Revision of units for the End Semester Exam | Discussion |
| **END SEMESTER EXAMINATION** |
| Subject Outcomes: |
| Students finishing this course will be able to:* Understand concepts related to environment studies and the responsibility of designing built environments.
* Work according to the various Acts and regulations present in the country.
* Appreciate the bio-diversity a region is endowed with and respect the role of the natural environment.
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| References: |
| * Agarwal, K. C. (2001). Environmental Biology. Bikaner : Nidhi Publications Ltd.
* Benny, J. (2005). Environmental Studies. New Delhi : Tata McGraw Hill.
* Bharucha, E. (2005). Text book of environmental studies for undergraduates courses. New Delhi : Universities Press, UGC.
* Brunner, R.C. (1989). Hazardous Waste Incineration. New Delhi : McGraw Hill.
* Kaushik, A. and Kaushik, C. P. (2010). Basics of Environment and Ecology. New Delhi : New Age International Publisher
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| Dr. Srinivas Daketi Dr. M. Banu Chitra, Ar. Hiba Abdulkader Thayyil (Head of Department) (Subject Coordinators) |