

**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:**Ecology, Ecosystem Analysis and Field Ecology **(**MLAR122**)**

**I Yr. II Sem. M.Arch (landscape) , 2024-25**

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| Contact Hours : 03 hours per week  | Credits: 3 (3L) |
| Internal Assessment: 50 Marks Externals Assessment: 50 Marks **Total: 100 Marks** | **Coordinators: Dr. M. Banu Chitra** | Attendance: 75% Minimum |
| **Subject objectives:*** To understand the role of the plant community in the field and to establish a broad understanding between aquatic and terrestrial ecosystems.
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|  **Lecture Plan** |
| **Week No.** | **Topic (Lecture/Discussion)** | **Exercise/Assignment** |
| Week 1 | Unit:1 **Evolution** Earth and Life. Concept of Ecosystem, General Structure and Function  | Assignment 1- Analyse an Environmental Documentary Objective: Critically examine media's role in environmental education.**Task:** Watch a documentary write a critique focusing on its effectiveness in raising awareness based on landscape perception.**Output**: A review essay or presentation. |
| Week 2 | Energy flow, Primary & Secondary Production | Submission and discussion of Assignment 1 |
| Week 3 | Types of Bio-geochemical cycles; Carbon cycle, Global water cycles, nitrogen cycle, bioaccumulation and bio-magnifications iii) Analysis and evaluation. | Lecture and Classroom Discussion |
| Week 4 | **Unit II  Concept of ecosystem services**Types of Ecosystems, Plant Community in general:i) Structure ii) Concept of ecological Succession and Maturity, Types of succession iii) Analysis iv) Description and Evaluation.  | Lecture and Classroom Discussion |
| Week 5 | Ecological conditions of India, Eco systems and forest types of India | Lecture and Classroom Discussion |
| Week 6 | Phyto geographical regions of India.ecosystem functioning, analysis and types of habitat and behavior. | Lecture and Classroom Discussion |
| Week 7 | **Unit III Systems Ecology** Introduction to systems approach and mathematical models in ecology |  Lecture & Discussion (Introduction to **Assignment II** on selective toipcs) |
| Week 8 | Selected topics in ecosystem management | Lecture & Discussion |
| Week 9 | Climate change – causes and consequences, Aquatic ecology – fresh water and marine | Lecture & Discussion |
| Week 10 | **Unit IV Field Ecology** Quadrat, line transect, community analysis, Field work and laboratory analysis of data | Field measurement based on the types of analysis |
| Week 11 | Field work and laboratory analysis of data | Field measurement based on the types of analysis |
| Week 12 | Field work and laboratory analysis of data | Presentation based on the field work carried  |
| Week 13 | **Unit V Selected topics in ecosystem management:**Climate change – causes and consequences | Lecture & Discussion |
| Week 14 | Aquatic ecology – fresh water and marine | Lecture & Discussion |
| Week 15 | Review of all Assignments | Lecture & Discussion |
| Week 16 | Revision of units for the End Semester Exam |

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| **END SEMESTER EXAMINATION** |
| **Subject Outcomes:** |
| 1. Understand the various aspect of environmental concepts and about plant community prevalent to landscape architecture2. Examine and to create models of various community of ecosystems in detail through various techniques. |
| References: |
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* 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
* Odum, E.P. (1959) Fundamentals of ecology , 5th edition, America: University of Georgia.
* Keith, R. (1974) Man, nature and ecology , Aldus book limited.
* Kluwer academic publishers (2018) Landscape Ecology, 3rd edition, Netherlands: SpringerNetherlands.
* Ambasht, R.S. and Ambasht, N.K. (2002) Modern Trends in Applied Terrestrial Ecology, Ist edition,US: Springer US.. Jr., G.T.M. (2004) Living in the Environment: Principles, Connections, and Solutions, Brooks / Cole publishers co.
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* Marsh, W.M. (1997) Landscape planning – Environmental Application, John Wiley and sons Inc.Plant Ecology, Kluwer Academic Publishers.. Singh, M.J.a.I. (2017) Landscape Architecture: History, Ecology and Patterns, copal publication.
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* Wu, J. Landscape ecology, cross-disciplinarity, and sustainable science. Landscape Ecology 21, 1–4 (2006).
* With, K. A. 10. (2002) The landscape ecology of invasive spread. Conservation Biology 16, 1192–1203
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| Dr. Srinivas Daketi Dr. M. Banu Chitra, (Head of Department) (Subject Coordinator) |