

**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. | | | | |
| **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 architecture  2. Examine and to create models of various community of ecosystems in detail through various techniques. |
| 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 * 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: Springer Netherlands. * 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. * Kormondy, E.J. (1969) Concepts of Ecology , 4th edition, Prentice Hall.Landscape Ecology, Kluwer Academic Publishers. * 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. * Jr., G.T.M. (2004) Living in the Environment: Principles, Connections, and Solutions, Brooks / Cole publishers co * 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 |
| Dr. Srinivas Daketi Dr. M. Banu Chitra,  (Head of Department) (Subject Coordinator) |