


हिमाचल प्रदेश केंद्रीय विश्वविद्यालय
Central University of Himachal Pradesh
(Established under Central Universities Act 2009)
Academic Block, Shahpur, Distt. Kangra (H.P) - 176206
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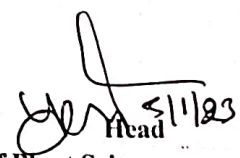
List of the Interdisciplinary courses offered for 2nd Semester in the Department of Plant Science.

Sr. No.	Course Name	Course Code	Credit	Name of Faculty Member
Interdisciplinary Courses offered by Department of Plant Science				
1	Principles of Ecology and Environment	PLS 470	2	Dr. Ashun Chaudhary
2	Fundamental of Seed Technology	PLS 473	2	Dr. Jitender Kumar


Head
Department of Plant Science
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Head
Department of Plant Science

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Head, Department of Plant Science
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Academic Block, Shahpur, Kangra (H.P)-176206

Course Name: Principles of Ecology and Environment

Course Code: PLS 470

Credits = 02

Learning outcomes

- Students will be to understand characteristics of plants at community, population and ecosystem levels.
- Students will have sound background of ecosystem structure and function.
- Students will be able to use various tools and techniques for ecological studies
- Students will understand the source of the environmental pollution and how to control the pollution in a sustainable way
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UNIT -I

Basic concept of Ecology, Environment interaction with ecological factors, Approaches to Ecology, Biological Clocks, Ecological niche, and type of niche, Ecological Equivalents and Character Displacement, Basic Concepts of Population, Population Characteristics and Population Dynamics.

UNIT -II

Methods of study of communities, Individualistic concept and vegetational continuum concept of communities, Interspecific associations and ordination, Community Dynamics, Types of Succession, General process of succession, Hydrosere, Lithosere and Heterotrophic Succession.

UNIT -III

Ecosystem Development, Climax concept and Biome, Structure of Ecosystem. Function of an ecosystem, Ecological Energetic, Nutrients cycles in ecosystem, Basic concept of system ecology, Freshwater Ecology, Marine Ecology, Estuarine ecology, terrestrial ecology and desert ecology

UNIT -IV

Forest resources, forest cover, Forest survey of India, Deforestation, Desertification, Afforestation, Energy plantations for ethanol and biodiesel, Conventional and non conventional sources of energy

UNIT -V

Environmental pollution, Kinds, sources, Climate change. Basic concepts of sustainable development, Industrial ecology and recycling industry, role of natural products and biodiversity in international trade.

Suggested Readings:

1. Ambasht, R. S. and Ambasht, A. K. 2002. A textbook of Plant Ecology. C.B.S. Publishers and Distributors.
2. Kumar, H. D. 2000. Modern Concepts of Ecology. Prentice Hall India. New Delhi.
3. E. P. Odum, 2005, Fundamentals of Ecology, Cengage Publisher, 5 edition
4. P. D. Sharma, 2011, Ecology and Environment, Rastogi Publication
5. Chapman, J.L. and Reiss, M.J. 1988. Ecology – Principles and Applications, Cambridge University Press, U.K.
6. Tiwari, S.C. 1993. Concept of Modern Ecology, Bishan Singh Mahendra Pal Singh, Dehra Dun.
7. Kormondy, E.J. 1996. Concepts of Ecology, Prentice-Hall of Indian Ltd., New Delhi

Course Name: Fundamentals of Seed Technology

Course Code: PLS 473

Credits = 02

Learning outcomes:

After completion of the course, the students will be able:

- To understand the seed development process and different ways of its processing
- To examine the various methods of Seed testing
- To explain the concept of hybrid seed production

UNIT-1

Overview of seed Technology: types of seeds and their characteristics, Development of seed and morphology, Difference between monocot and dicot seed, Seed Dormancy, methods of breaking dormancy

UNIT-2

Seed germination: pattern and basic requirement for germination, normal and abnormal seedlings, germination inhibitors, Evaluation of seed related traits

UNIT-3

Seed processing: Methods of seed conditioning, Methods used for seed treatment, Principles of seed storage: various methods for seed storage, factors affecting seed storage, Seed viability, Methods of testing of seed viability

UNIT-4

Overview of seed certification, Function of seed certification agency, Seed Legislation and Act in India, Basic concept of seed pathology and seed entomology.

UNIT-5

Principles and methods of seed production. Importance of seed marketing, Concept of hybrid seed and its production

Reference Books:

1. Agrawal, P. K., (2010). Principles of Seed Technology. Indian Council of Agricultural Research, New Delhi.
 2. Agrawal, R.L. (2015). Seed Technology. Oxford & Ibh Publishing Co Pvt Ltd.
 3. Basra, A. (2006). Handbook of Seed Science and Technology. CRC Press.
 4. Khare, D. and Bhale, M. S. (2014). Seed Technology 2nd Revision, Jain Book
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