

UNIVERSITY OF RAJASTHAN
JAIPUR


SYLLABUS

POST-GRADUATE
DIPLOMA IN

- ⇒ **HUMAN ECOLOGY**
- ⇒ **ENVIRONMENTAL STUDIES**
- ⇒ **POPULATION STUDIES**

(SEMESTER SCHEME)

IInd Semester Exam June 2017


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(Academic)
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INDIRA GANDHI CENTRE FOR HUMAN ECOLOGY, ENVIRONMENTAL AND
POPULATION STUDIES,
UNIVERSITY OF RAJASTHAN, JAIPUR-302004

Post P.G. Diploma in Human Ecology (Semester Scheme)

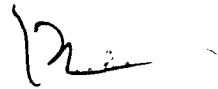
2016-17

II SEMESTER

Post P.G. Diploma in Human Ecology is divided into two semesters. There are Five theory papers and One field study in each semester. Grades will be awarded as per norms considered for faculty of science.

Eligibility for Admission

Masters Degree in Social Science, Science, Medical Science, Engineering, Law with atleast 50% marks (45% for SC and ST candidates).



Post P.G.Diploma in Human Ecology

IInd Semester

S.N.	Subject code	Course Title	Course category	Credit	Contact hours per week		
					Lecture	Tutorial	Practical
1.	DHE 801	Ecopolitics and Development	CCC	6	6	0	0
2.	DHE 802	Ethnobiology	CCC	6	6	0	0
3.	DHE 803	Ecological Economics	CCC	6	6	0	0
4	DHE B01	Elective-1 Diversity of Ecosystem	ECC	6	6	0	0
5	DHE B02	Elective 2- Biological Diversity	ECC	6	6	0	0
6	DHE B11	Elective-3 Field Studies in lieu of 3 rd Elective paper	ECC	6	0	0	6
		Total		36	30	0	6

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DHE 801: Environment and politics 80 Hours

The global and Indian Perspective, the interlinked national and international environmental issue of development. (20 Hours)

The ecological status of the developed, developing and the under developed nations. (20 Hours)

Ecopolitics with regard to global distribution of natural resources inequities in its consumption, provision of Eco-fund for environmental cleaning. (25 Hours)

The Stockholm Conference (1972), The United Nations Conference on Environment and Development (1992). (15 Hours)

DHE 802: Ethnobiology 80 Hours

Introduction to Ethnobiology, plant and animal resources of India (20 Hours)

Medicinal and food crops of Rajasthan used by tribal communities. (20 Hours)

Ethnoecology, traditional ecological knowledge and its use in environmental protection. (20 Hours)

Traditional Environmental Management and its contribution in forest, water and soil conservation and wildlife protection. (20 Hours)

DHE 803 : Ecological Economics 80 Hours

History and development of Ecological economics, objective of Ecological Economics, Need of Ecological Economics, reintegration of Ecology and Economics (20 Hours)

Sustainable scale, fair distribution and efficient allocation; ecosystem, biodiversity and ecological services. (20 Hours)

Substitutability versus complimentary of natural, human and manufactured capital; trade and community (20 Hours)

History of environmental institutes and instruments, success, failures and remedies; policy instruments. (20 Hours)

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Elective-1

DHE B01: Diversity of Ecosystem

80 Hours

The ecological principles and factors determining survival of life on earth, The global ecosystem and the place of man in it; human food chain and the energy requirements for the maintenance of human ecosystems on earth. (20 Hours)

Forest ecosystem- Forest as an ecosystem, economics and ecology of forest, role of forests in protection of species, climate regulation and production of various produce (20 Hours)

Grassland ecosystem - Distribution and types of grasslands. Wetland Ecosystem- Distribution and economic importance of wetlands. (20 Hours)

Desert Ecosystem and Wastelands- Structure, types and global distribution of deserts, Types and distribution of wastelands in India, Aquatic Ecosystem: structure and distribution of fresh water ecosystem, eusturies and marine ecosystem. (20 Hours)

Elective 2-

DHE B02: Biological Diversity

80 Hours

Meaning and scope of Biological diversity, causes of losses of Biological diversity, Importance of Biological diversity. (20 Hours)

Levels of biodiversity, Alpha, Beta and Gama diversity, Endangered and threatened species, Hot spots of Biodiversity, Red data book (20 Hours)

Bio-geographical zones of India, Diversity and distribution of major forests at National and Global level, Status of biodiversity in India, Agro-ecological regions of crop diversity in India, Biodiversity conservation in folk-beliefs in Rajasthan, (20 Hours)

Modern techniques of Measurements and monitoring of biodiversity, The concept of global "ecological balance" and the threats of its imbalances due to rising human population. (20 Hours)

Elective-3

DHE B11: Field Studies in lieu of 3rd Elective paper

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Post P.G. Diploma in Environmental Studies (Semester scheme)

2016-17

II SEMESTER

Post P.G. Diploma in Environmental Studies is divided into two semesters. There are Six theory papers and two practicals in each semester. Grades will be awarded as per norms considered for faculty of science.

Eligibility for admission:

Masters Degree in Science, Medicine, Engineering, Law (with B.Sc.) with at least 50% in aggregate (45% for SC and ST candidates).

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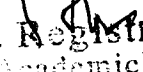
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Post P.G.Diploma in Environmental Studies

2nd Semester

S.No.	Subject code	Course Title	Course category	Credit	Contact hours per week		
					Lecture	Tutorial	Practical
1.	DES 801	Environmental Economics, Auditing and Design	CCC	4	4	0	0
2.	DES 802	Diversity of Ecosystems	CCC	4	4	0	0
3.	DES 803	Sustainable Development	CCC	4	4	0	0
4	DES 811	Core Lab	CCC	6	0	0	6
5	DES B01	Elective-1 Social Issues and Environment	ECC	4	4	0	0
6	DES B02	Elective-2 Energy Resources	ECC	4	4	0	0
7	DES B03	Elective-3 Environmental Pollution Control	ECC	4	4	0	0
8	DES B11	Elective Lab	ECC	6	0	0	6
		Total		36	24	0	12


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Post P.G. Diploma in Environmental Studies
II Semester

DES 801: Environmental Economics, Auditing and Design **60 Hours**

Objectives and scope of EA, types, general audit methodology, Elements of audit process. **(15 Hours)**

Waste audits, Liability Audits and site Assessment, EMS auditing, principals of green buildings. **(15 Hours)**

Environmental economics definition, environmental cost, benefit taxes, accounting, environmental valuation, economy of natural resources, ecological economics. **(15 Hours)**

Principals of environmental design, benefits and motivation for ED, ED for manufactured products, ED for building construction, Indian examples. **(15 Hours)**

DES 802: Diversity of Ecosystems **60 Hours**

Forest Ecosystem; Types and conservation, Distribution and Productivity of Forests, Conservation Policies and Acts. **(15 Hours)**

Grassland: Grassland ecosystems, types, distribution and productivity in grassland ecosystems. **(15 Hours)**

Desert: Desert ecosystems (Hot and Cold) distribution, productivity, and adaptations. **(15 Hours)**

Aquatic ecosystem: fresh water, estuaries and marine ecosystem. **(15 Hours)**

DES 803: Sustainable Development **60 Hours**


Sustainable agriculture: drip irrigation, organic fertilizers, organic pesticides, integrated pest management. **(15 Hours)**

Sustainable industrialization: clean development mechanism, reduction of emission in air, reduction of effluents in water bodies. **(15 Hours)**

Sustainable forest management: water shed development and conservation, soil conservation, ecosystem peoples' rehabilitation. **(15 Hours)**

Sustainable mining: mining overburden utilization, mine reclamation, afforestation, conservation of indigenous species. **(15 Hours)**

DES 811: Core lab based on theory papers


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Elective-3

DES B01: Social Issues and Environment

60 Hours

Environmental ethics, Religion and Environment, Eco-Imperialism with regard to global distribution of resources, eco-fund (15 Hours)

Current environmental issues in India; Narmada Dam, Tehri Dam, Almetti Dam, Silent valley, Doon Valley, Sariska and Narayan Sarovar etc. Chipko movement, Appiko movement (15 Hours)

Scheme of labeling of environmentally friendly products (Ecomark), Public awareness (15 Hours)

Role of NGOs in environmental protection, KSSP, etc., problems and causes related to resettlement and rehabilitation of displaced people, dams-benefits and problems. (15 Hours)

Elective-3

DES B02 : Energy Resources

60 Hours

Classification of energy resources, renewable and non renewable energy resources, supply and demand of energy both in urban and rural areas. (15 Hours)

Conventional energy resources, coal, oil, natural gas, nuclear energy. (15 Hours)

Non-conventional energy sources, solar, wind, hydel, tidal and geothermal energy resources, the nuclear fuels, biomass energy, hydrogen as fuel etc. (15 Hours)

Concept of alternative sources of energy, energy from waste, Alternative Fuels for Transportation. (15 Hours)

Elective-3

DES B03 : Environmental Pollution Control

60 Hours

Air pollution control technologies and equipments, air quality monitoring. (15 Hours)

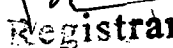
Water pollution control: Waste Water Treatment, Groundwater Protection Surface Water Management, Treatment and Supply of Drinking Water. (15 Hours)

Control of soil pollution, Soil Conservation, mine land reclamation, Wasteland reclamation, Control of noise pollution: structural and non structural measures. (15 Hours)

Role of an individual in prevention of pollution, Pollution case studies. (15 Hours)

DES B11: Elective lab based on theory papers

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Post P.G. Diploma in Population Studies (Semester scheme)

2016-17 II SEMESTER

Post P.G. Diploma in Population Studies is divided into two semesters. There are Five theory papers and One Field study in each semester. Grades will be awarded as per norms considered for faculty of science.

Eligibility for admission:


Master degree in Social Science, Science, Medical Science, Engineering, Law with at least 50% Marks (45% for SC and ST candidates).


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Post P.G.Diploma in Population Studies

2nd Semester

S.N.	Subject code	Course Title	Course category	Credit	Contact hours per week		
					Lecture	Tutorial	Practic
1.	DPS 801	Development of Population Studies	CCC	6	6	0	0
2.	DPS 802	Population and Human Resources	CCC	6	6	0	0
3.	DPS 803	Demography	CCC	6	6	0	0
4	DPS B01	Elective-1 Epidemiology	ECC	6	6	0	0
5	DPS B02	Elective-2 Basic statistical tools for population studies	ECC	6	6	0	0
6	DPS B11	Elective-3 Field Studies in lieu of 3 rd Elective paper	ECC	6	0	0	6
		Total		36	30	0	6



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Post P.G. Diploma in Population Studies

IInd Semester

DPS 801: Development of Population Studies	80 Hours
History of Population: Past, present and future population trends across world, continents, major regions, India and Indian states, with brief description of causes. population pyramids, pre-Malthusian view on population, the theories of Malthus and his immediate predecessors, post-Malthusian views on population.	(20 Hours)
Optimum Theories of Population: Optimum theory of population, explanation of the optimum theory, views of Dalton and Robbins, criticism of the optimum theory.	(20 Hours)
Biological Theories of Population: Sadler's Density and Fecundity principle, Diet Theory of Thomas Doubleday, Logistic Curve Theory, Carrado Ginni's principle, Herbert Spencer's Analysis of fertility function, Theories of protein consumption, Kaczynsky's Biological Theory.	(20 Hours)
Socio-Cultural, Economic and Demographic Transition of Population: Dumont Theory of social capillarity, Frank Fetter Theory of voluntarism, Nitti Principle of Individuality, L. Brente Theory of Prosperity and Pleasure, Ungern Sternberg Theory of Rationalism, Henry George and Harvey Liebenstein Theory of population growth, Theory of Demographic Transition.	(20 Hours)
80 Hours	
DPS 802 : Population and Human Resources	
Population as a resource, relation of Population growth and development, The Food and Population Balance	(20 Hours)
The Population Perspective Population growth, changes in mobility, Managing Distribution and Mobility	(20 Hours)
Conditions of health and education, Managing the human resources, Improving Health, Broadening Education, Empowering Vulnerable Groups.	(20 Hours)
Targets and indicators of the Millennium Development Goals, Status of Human Resource Development in India.	(20 Hours)


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DPS 803 : Demography

80 Hours

(20 Hours)

Definition and Evolution of demography as a scientific discipline; Nature and scope of demography, Multi-disciplinary nature of demography, its links with other disciplines. Basic demographic concepts.

Types and different sources Demographic Data, Population censuses across the world, Indian censuses, vital registration system, sample registration system, survey on causes of death, National Sample Survey Organization's surveys, details of different rounds collecting population and health data. **(20 Hours)**

Age-Sex Structure and its Dynamics, Role of age-sex structure in demography. Present status, past trends and probable future changes in age-sex structure of India, Determinants and consequences of sex-age structure of population. **(20 Hours)**

Demographic dividend. Ageing of the population. Relative role of low fertility and low mortality in ageing. Socio-economic consequences of population ageing. Components of population change. Demographic transition **(20 Hours)**

Elective-1

DPS B01: Epidemiology

80 Hours

Definition and objectives of epidemiology; Epidemiology and clinical practice; The epidemiologic approach; Infectious disease epidemiology, occupational epidemiology, disaster epidemiology, **(20 Hours)**

Disease outbreak; Determinants of disease outbreak, Identifying the roles of genetic and environmental factors in disease causation: Association with known genetic diseases; Age at onset; Family studies; Interaction of genetic and environmental factors. **(20 Hours)**

Epidemiology and public policy: Epidemiology and prevention; Population versus high risk approaches to prevention; epidemiology and clinical medicine; Risk assessment; Meta Analysis. **(20 Hours)**

Cohort studies – design, types of cohort studies; Case control study – design, selection of cases and controls, problems in control selection, matching, problems of recall, use of multiple controls, when case control study warranted, nested case-control study; cross-sectional studies. **(20 Hours)**


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Elective-2

DPS B02: Basic statistical tools for population studies 80 Hours

Descriptive and Inductive statistics, Concept of variables, Tabulation of data, conversion of raw data into frequency distribution, graphical presentation of data. Measures of Central Tendency- Mean (arithmetic, geometric, harmonic) Median, Mode; their merits and demerits. (20 Hours)


Measures of dispersion: Range, Variance, Standard Deviation, Merits and demerits of different measures of dispersion. Probability, Laws of probability. Correlation- Pearson correlation coefficient, and its properties; Spearman ranks correlation coefficient. Concept of linear regression. (20 Hours)

Inductive statistics: Population, sample parameter, standard error. Testing statistical hypothesis and test of significance. Testing the association of attributes and Chi-square goodness of fit. Analysis of Variance and Covariance. Introduction to Multivariate Analysis. (20 Hours)

Introduction to sampling; Simple random and systematic sampling; Sample size and power estimation; Stratified sampling; Cluster sampling; Concept of design effect and its estimation; Concept of weighting; Sampling and non-sampling errors. (20 Hours)

Elective-3

DPS B11: Field Studies in lieu of 3rd Elective paper


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