MAHARSHI DAYANAND SARASWATI UNIVERSITY, AJMER

पाठ्यक्रम

SYLLABUS

SCHEME OF EXAMINATION AND COURSES OF STUDY

FACULTY OF SCIENCE

Certified Course in Soil and Water Conservation Examination (w.e.f. 2015-16)

Certified Course in Basics of Ornithology Examination (w.e.f. 2015-16)

महर्षि दयानन्द सरस्वती विश्वविद्यालय, अजमेर

NOTICE

1. Change in Statutes/Ordinances/Rules, Regulations Syllabus and Books may, from time to time, be made by amendment or remaking, and a candidate shall, except in so far as the University determines otherwise, comply with any change that applies to year he has not completed at the time of change. **The decision taken by the Academi Council shall be final.**

सूचना

1. समय-समय पर संशोधन या पुन: निर्माण कर परिनियम, अध्यादेशों/नियमों / विनियमों / पाठ्यक्रमों व पुस्तकों परिवर्तन किया जा सकता है, तथा किसी भी परिवर्तन छात्र को मानना होगा बशर्ते कि विश्वविद्यालय ने अन्य प्रकार से उनको छूट न दी हो और छात्र ने उस परिवर्तन पूर्व वर्ष पाठ्यक्रम को पूरा न किया हो। **विद्या परिषद द्व लिये गये निर्णय अन्तिम होंगे।**

Certificate Course in Soil and Water Conservation

Scheme

1.	Names of following papers	**Max. Marks**	**Min. Marks**
	Paper I - Water : Resources, quality and conservation	100	25
	Paper II - Soil : Resources, Quality and Conservation	100	25
	Paper III - Practicals Field Report	50+50=100	36

2. Minimum qualification (Eligibility) for admission in the proposed Course : 10+2 with science biology/science mathematics/agriculture
3. Periods (Number of periods for Each Paper)
   60 Periods for each theory/practical
   Minimum Pass Marks :
   25 in each paper of theory but 36% marks in aggregate are essential

I Division	60%
II Division	48%

Syllabus of Cerfiticate Course in Soil and Water Conservation
Water : Resources, quality and Conservation
Paper I

Water Resources

Jydrological cycle, Assessment of surface and groundwater resources. national water resources, Economics of water use, legal control of water use. Need for sustainable water management. NGOs and their role in water management practices.

Occurance

Vertical distribution of ground water. Aquifers, confined and unconfined. Water table variations. Perched water table. Porosity and permeability. Movement of ground water, Darcy's Law. Types of wells. Introductory ideas about the following : Water logging, conjuctive use ofwater; Causes for depletion of water table. Water analysis kit and its use. Elementory idea about gro.nd water exploration.

Water Quality

Physical, chemical and biological characteristics of water, their significance. Standards for drinking and agriculture water.

Water Conservation

Introductoryideas :

Conservation measures : Gully control. terracing, bunding, check dams; reclamation of soils. Afforestation.

Water harvesting. Rain water harvesting, rood water harvesting, artificial recharge.

Water Conservation and management agencies in India and abroad.

Soil : Resources, Quality and Conservation
Paper II

Basic Classificationof rockes
Land Classification and use : Causes of Soil degradation.
Soil Survey : aninventory of the soil resource
Soils of the India
soils of Rajasthan
Physical, Chemical and biological characteristics of Soil, Soil Profile (A,B & C horizones)
Soil Erosion processess and prediction (Wind)
- Soil erosion by wind - physical process
- Soil erosion by wind : Estimating rates of loss

Soil erosion processes and prediction (water)
- Soil erosion by water : rainfall and erosivity
- Soil erosion by water : soil erodibility
- Watersheds
- Soil erosion by water : Universal Soil Loss Equation (USLE)

Soil conservation in Agriculture
- Soil conservation : Cropping systems
- soil conservation : Tillage

Agricultural conservation pra tices
Soil Conservation : Terraces and diversion
soil conservation
- Windbreaks and shelterbelts
- Vegetating mining and other construction sites
- Vegetating areas of high erosion hazards
- Streambank erosion control structure and bank stablization

Paper III - Practical

1. Water Analysis
   pH, conductivity, hardness, alkalinity, turbidity, Chloride, DO
2. Soil Analysis
   Physical - Texture, Water holding capacity, moisture content, collodial matter, porosity
   Chemical - pH, Salinity, alkalinity, Carbonate, organic Content, NPK
3. Study of soil Profile :
   Field study for the study of land forms and rocks,
4. Visits on sites of environmental interest land pollution and water pollution.

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SYLLABUS

SCHEME OF EXAMINATION AND COURSES OF STUDY

FACULTY OF SCIENCE

Certified Course in Basics of Ornithology

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Syllabus

Certificate course in Basics of Ornithology (Six Months Duration)

Certificate in Ornithology

Eligibility : Graduate in any Discipline of science with 50% marks. Admission will be strictly on merit basis. Preferences will be Given to (1) those candidates who are already employed or (2) those having background of Environmental Science

Seat : 20 seats

Scheme of Examination : Six months

Papers and Marks

Paper	Nomenclature		Marks
Paper-I	Basics of Ornithology		100
Paper-II	Bird Watching and Bird Conservation		100
Paper III	Project Work and Field Report		100
	Project work	50	
	Field Report (Internal Evaluation only)	50	
	Total	300	

The marks of each Paper I to II are divided as under:

Seminar I - 10
Seminar II - 10
Internal assessment test I -10
Internal assessment test II - 10
Performance - 10
Examination - 50

Total marks of each paper = 100 X 2 papers = 200

Project Work and Field Report	100
1 Project work	50
2 Field Report (Internal Evaluation only)	50

For evaluation of Project work, the candidate will give a presentation before the External Examiner. Marks for the Field Report will be awarded by the internal faculty. The students are required to secure minimum 20 marks (Pass Marks) separately in Project work and Field Report for passing.

The students are required to secure the marks as below:

Pass marks	40% in each Paper
II Division	48% and above in Aggregate
I Division	60% and above in Aggregate

Each paper (expect Project Work/ Field Report) will contain TEN questions having two questions from each unit. The candidates are required to attempt Five questions in all by selecting at least one question from each unit.

An education tour may be organized to important places of interest within or outside the State under the supervision of faculty member/s of the department. The expenses will be borne by the participating student. However, the university will provide train/bus travel concessions as per necessity and university rules. Traveling expenses of the teacher/s will be borne by the university as per rules of TA and DA.

This being a part time professional programmes, postgraduate students may be allowed to pursue this programme under the dual degree scheme. 75% attendance will be compul

PAPER-I
BASICS OF ORNITHOLOGY

There are five units in all. Two questions will be set up from each unit and the candidates are required to attempt Five questions by selecting at least one question from each unit.
Time 3 hours Maximum Marks 100

Unit-I

Introduction: Ornithology, Evolution of birds, Importance of birds, Bird Classification

Unit-II

Bird Features

(i) External Features like Head, Neck, Wings, Feathers, Feet and Claws, etc.
(ii) Internal Features like Skeletal System, Muscular System, Circulatory System, Respiratory System, Digestive System, Urinogenital System, Nervous System, Vision, Hearing, etc

Unit-III

Breeding Biology
Territoriality, Nesting, Eggs, Incubation and case for the young, Brood parasitism.

Unit IV

Birds Activities: Flying, Walking, Eating, Perching on trees or wires, Drinking water, Singing, Nesting, Preening, Moulting, Bathing, Dust bath, Flocking, Roosting etc

UnitV

Migration in Birds: Modes of flight in Migration. Problems of way finding. Causes of Migration. Origin of Migration. Significance of Migration. Disadvantages of Migration.

PAPER–II
BIRD WATCHING AND BIRD CONSERVATION

There are five units in all. Two questions will be set up from each unit and the candidates are required to attempt Five questions by selecting at least one question from each unit.
Time 3 hours Maximum Marks 100

Unit- I

General Instruction by their physical features, flight, Bird Habitats Bird Counting/ Census

Unit-II

Bird Watching: Identification of Birds, Calls and songs.
Equipments for Bird Watching. Principles of Bird ethics.

Unit-III

Bird Conservation- Saving the birds, carry the birds in distress, First aids for diseased/ injured birds, Acts related to Bird conservation, National Parks & Bird Sanctuaries.

Unit-IV

Bird Photography: Understanding Camera basics & lenses & light conditions. Photographing- water bird, Small perching birds, Birds in Dark Forest, Seabirds & Shorebird, Birds in urban setting, Nesting birds.

Unit-V

Life of Salim Ali –The great ornithologist of India, Societies concerned with birds, Books written by Salim Ali.

Paper III
Project Work and Field Report

1. 4 to 6 Field trips for bird study. The trip will be day trips
2. Three days camp for study of bird and their habitats
3. Web Surfing of birds.
4. Preparing PPT

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