UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A+ GRADE' UNIVERSITY)
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

NOTIFICATION

(19/Aug./Adp/24)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Academic Council, is pleased to authorize the adoption of the revised Syllabi and Courses of Study in the subject of **Environmental Science for** semesters I and II under the **Choice Based Credit System** at the Undergraduate level **(as given in the Annexure)** for the examinations to be held in the years indicated against each semester as under:-

Subject	Semester	For the examinations to be held in the year	%of Change
Environmental Science	Semester-I	Dec. 2019, 2020 and 2021	70% Change
	Semester-II	May 2020, 2021 and 2022	70% Change

The Syllabi of the courses is available on the University website: www.jammuuniversity.in

Sd/-
DEAN ACADEMIC AFFAIRS

No. F.Acd/II/19/4524 - 4585
Dated: 20-8-2019

Copy to:

1. Dean, Faculty of Life Sciences
2. HOD/Convener, Board of Studies in Environmental Science
3. All members of the Board of Studies
4. C.A. to the Controller of Examinations
5. Director, Computer Centre, University of Jammu
6. Asst. Registrar (Conf. /Exams. UG)
7. Incharge University Website for necessary action please

Assistant Registrar (Academic)

16/8 16/08/19 16/8/19

Detailed Syllabus
Semester - I

Course No. : U ES TS 104 **Title : Environmental Studies – 1**

Time of Examination : 2:30 hrs. a) Semester Examination : 80

Credits : 2 b) Sessional Assessment : 20

Syllabus for the examinations to be held in December 2019, 2020 & 2021

UNIT - I THE ENVIRONMENT AND ECOSYSTEM **15 Lectures**

1.1 Environment and Environmental studies: Definition, concept, components and importance.
1.2 Ecosystem: Structure and function of ecosystem.
1.3 Food chain, food web and ecological pyramids.
1.4 Bio-geochemical cycles in ecosystems: (carbon, nitrogen and phosphorous cycle).
1.5 Ecological succession: Definition, types, concept and process (Hydrosere, xerosere).

UNIT -II BIODIVERSITY AND ITS CONSERVATION **15 Lectures**

2.1 Definition, concept, levels and values of biodiversity.
2.2 Biodiversity of India, India as a mega diversity nation, Hotspots of biodiversity.
2.3 Threats of biodiversity (Habitat loss, poaching of wildlife and man wildlife conflicts).
2.4 Conservation of biodiversity : *In-situ* Conservation; *ex-situ* Conservation.
2.5 Ecotourism, concept of protected area network with special reference to Kishtwar, Dachigam and Hemis National Parks.

UNIT -III NATURAL RESOURCES AND THEIR CONSERVATION **15 Lectures**

3.1 Forest Resources: uses and overexploitation of forests and consequences of deforestation.
3.2 Water Resources: use and consequences of over-utilization, concept of rain water harvesting and watershed management, water conflicts.
3.3 Food Resources: Sources of food, Impacts of modern agriculture on environment (Fertilizer-pesticide problem, water logging and salinity), organic farming.
3.4 Energy Resources: renewable and non-renewable energy sources, growing energy needs and alternate energy sources.
3.5 Land Resources: global land use patterns, soil erosion, desertification, wasteland reclamation.

Course No. : U ES TS 104 (New), Syllabus under CBCS at U/G Level for the examinations to be held in Dec, 2019, 2020 & 2021

Field / Practical Work

All the students are required to undertake the following field/practical work on basis of which students will be assessed in internal assessment.

1) To record the biodiversity of the any visited area.
2) Identify the natural resources of your area.
3) Identify sources of energy used in your area.
4) Visit to a local area to document environmental assets/ecosystems River/Forest/ Grassland/Mountain.
5) Construction of food chain / food web of the visited area

Instructions for Students : Choice of questions

Section – A Attempt **All Three** questions restricting your answer to 70 to 80 words. Each question carries **06 marks**.

Section – B Attempt **All Three** questions restricting your answer to 250 to 300. Each question carries **14 marks.**

Section – C Attempt **Any One** question restricting your answer to 500 to 600 words. Each question carries **20 marks**.

Note for Theory Paper Setters

a. Theory Question paper will consist of THREE sections "A", "B" and "C".
Section A will consist of 3 short answer type questions of 6 marks each, representing all units i.e., at least ONE from each unit. All the questions would be compulsory. Candidate has to restrict the answers in 70 to 80 words.
Section "B" will consist of 3 medium answer type questions of 14 marks each, representing all units i.e., at least ONE question from each Unit with internal choice. All the questions would be compulsory. Candidate has to restrict the answers in 250 to 300 words.
Section "C" will consist of 2 or 3 long answer type questions of 20 marks each out of which candidates have to attempt only ONE. Candidate has to restrict the answers in 500 to 600 words.

b. Internal assessment test of 20 marks would be based on questions from syllabus (10 marks) and from field trip visits (10 marks).

Books recommended

1. Rajagopalan, R. (2016) Environmental Studies .Oxford University Press , New Delhi
2. Rana, S.V.S.(2010) Essentials of Ecology and Environmental Science, PHI Learning Pvt. New Delhi
3. Sulphey, M.M. (2012) Introduction to Environment Management, PHI Learning Pvt. New Delhi
4. Sharma, S.K. (2015).Environmental Law. Wisdom Press. New Dehli
5. Sharma, P.D. (2018) Ecology and Environment .Rastogi Publishers, New Delhi
6. Santra ,S.C. (2016) Environmental Sciences. New Central Book Agency, Kolkata

Detailed Syllabus
Semester - II

Course No. : U ESTS 204 **Title: Environmental Studies – 2**

Time of Examination: 2:30 hrs. a) Semester Examination : 80

Credits: 2 b) Sessional Assessment : 20

Syllabus for the examinations to be held in May 2020, 2021 & 2022

UNIT - I ENVIRONMENTAL POLLUTION AND DISASTER MANAGEMENT
15 Lectures

1.1 Definition, causes, effects and control measures of :
a) Air pollution
b) Water pollution.
c) Radiation pollution and nuclear hazard
d) Noise pollution

1.2 Solid waste management: causes, effects and control measures.

1.3 Global warming, Ozone depletion – causes effects and control measures

1.4 Acid rain : causes, effects and control measures

1.5 Types and management of Natural Disaster (earthquakes; Droughts; Floods and Landslides).

UNIT -II ENVIRONMENT AND HUMAN HEALTH **15 Lectures**

2.1 Human population growth and family welfare programme.

2.2 Common diseases : Air borne diseases (Tuberculosis, Influenza), water, (cholera, hepatitis), Food borne (Salmonellosis, Botulism) and Vector, (Malaria, Dengue) .

2.3 HIV/AIDS : symptoms, causes, effect and control measures.

2.4 Drug addiction: Causes, symptoms, prevention and rehabilitation in India.

2.5 Role of IT in environment and human health.

UNIT -III ENVIRONMENTAL TREATIES, LAWS AND ETHICS **15 Lectures**

3.1 Environmental Treaties: Montreal and Kyoto Protocol.

3.2 Salient features of following Acts:
a) Wildlife (Protection) Act. 1972
b) Water (Prevention and Control of pollution) Act., 1974
c) Forest (Conservation) Act., 1980
d) Air (Prevention and Control of pollution) Act., 1981
e) Environmental Protection Act., 1986

3.3 National Green Tribunal : Structure, composition and functions.\

3.4 Environmental Ethics

3.5 Concept of Sustainability and Sustainable Development

Course No. : U ESTS 204 (New) Syllabus under CBCS at U/G Level for the examinations to be held in May 2020, 2021 & 2022

Field / Practical Work

All the students are required to undertake the following field/practical work on basis of which students will assessed in internal assessment.

1 To identify the sources of air pollution of your area.
2 To identify the sources of water pollution of your area
3 To identify the sources of soil pollution of your area.
4 To identify the sources of noise pollution of your area.
5 Visited to health centre for recording of common water/air/food borne diseases of your area.

Instructions for Students : Choice of questions

Section – A Attempt **All Three** questions restricting your answer to 70 to 80 words. Each question carries **06 marks**.

Section – B Attempt **All Three** questions restricting your answer to 250 to 300. Each question carries **14 marks.**

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