



UNIVERSITY OF JAMMU

NOTIFICATION (18/June/Adp/32)

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 Syllabi and Courses of Study in the subject of **Environmental Science** for V and VI Semesters under the **Choice Based Credit System at the Undergraduate level** for the examinations to be held in the years as per the details given below:-

Subject	Semester	for the examination to be held in the years
Environmental Science	Semester-V	December 2018, 2019 and 2020
	Semester-IV	May 2019, 2020 and 2021

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

Sd/-
DEAN ACADEMIC AFFAIRS

No. F. Acd/II/18/4899-4948
Dated: 18-06-2018

Copy for information and necessary action to:

1. Special Secretary to the Vice Chancellor, University of Jammu for the kind information of the Worthy Vice-Chancellor please
2. Sr. P.A. to the Dean Academic Affairs/ Dean Research Studies
3. Sr. P.A. to the Registrar/Controller of Examinations
4. Dean, Faculty of Life- Science
5. HOD/Convener, Board of Studies in Environmental Science
6. All members of the Board of Studies
7. C.A to the Controller of Examinations
8. I/c Director, Computer Centre, University of Jammu
9. Asst. Registrar (Conf. /Exams. UG/ Inf./Pub.)
10. Incharge, University Website for necessary action please.


Assistant Registrar (Academic)

o/c

85/146 H/14/16/18

SEMESTER- V

**Examinations to be held in
Dec.,2018 ; Dec. 2019, and Dec. 2020**

Course No.	Title	Credit	Total Contact hours
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THEORY COURSES:-

UESTS 501	Environmental Pollution and Management	2	30
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LABORATORY COURSES:-

UESPS 502	Lab Course	2	30
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SEMESTER- VI

**Examinations to be held in
May,2019; May,2020, and May,2021**

Course No.	Title	Credit	Total Contact hours
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UESTS601	<u>Environmental Hazards: Concept and Management</u>	2	30
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LABORATORY COURSES :-

UESPS 602	Lab Course	2	30
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SEMESTER- V

SKILL ENHANCEMENT COURSE IN ENVIRONMENTAL SCIENCES

Detailed Syllabus

Course No: UESTS 501

Title : Environmental Pollution and Management

Credit:2

Time of Examination: 2.0 hrs

Marks:

- (a) Semester Examination: 40
(b) Sessional Assessment: 10

**Syllabus for examination to be held in
Dec 2018, Dec 2019 and Dec. 2020**

Unit-1: Air Pollution and control

- 1.1 Atmosphere: structure and composition.
- 1.2 Air pollution: Definition, Types (Primary and secondary pollutants) and Sources.
- 1.3 Effects of air pollution on;
 - 1.3.1 Biological systems (Animals, Plants and Humans)
 - 1.3.2 Non-biological systems (Ozone depletion, Smog, Acid deposition, Global warming).
- 1.4 Control and management of Air pollution.
- 1.5 Case studies - Bhopal Gas tragedy and London smog.

Unit -2: Water Pollution and control

- 2.1 Physico-chemical characteristics of water.
- 2.2 Water pollution: Definition, Types and Sources.
- 2.3 Effects of water pollution on man and environment (Eutrophication, Algal bloom, Bioaccumulation, Nitrate pollution, Heavy metal pollution, Ocean acidification).
- 2.4 Control and Management of water pollution.
- 2.5 Case studies- Minamata incident (Japan), Arsenic poisoning (West Bengal).

Unit-3: Soil Pollution and control

- 3.1 Soil pollution: definition and Sources of Soil pollution.
- 3.2 Degradation of soil – Role of soil erosion and modern agricultural practices.
- 3.3 Effects of soil pollution on soil quality and productivity (Acidification, Salinization, Desertification).



- 3.4 Control measures for soil degradation, bio-fertilizers, organic farming and biological pest management.
- 3.5 Case studies- Love canal Tragedy (New York) and Endosulfan tragedy (Kerala).

Literature Recommended:

1. J. Clifford Jones (2008). Atmospheric pollution. BookBoon Publisher, Aberden.
2. P.K. Goel (2006). Water Pollution: Causes, Effects and Control. Revised Edition. New Age International.
3. Madireddi V. Subba Rao (2014). Soil conservation, Management and Analysis. Daya Publishing House.
4. S. Chand (2006). Environmental pollution. S. Chand and Company.
5. Jeremy Colls (2002). Air Pollution. 2nd edition, Spon Press, London.
6. Prasad O. and Choudhary, M.C. (1992). Environmental Pollution Radiation. Venus Publishing House, Press Colony, Maya Puri, New Delhi.
7. Malaviya, P., Singh, P. and Singh, A. 2012. Environmental Studies. Acme Learning Pvt. Ltd., New Delhi.
8. B. K. Sharma (2005). Environmental Chemistry. 9th Edition, Krishna Prakashan Media (P) Ltd., Shivaji Road, Meerut, UP.

Note:

I. Note for Theory Paper setter

- a. Theory Question paper will consist of THREE sections 'A', 'B' and 'C'.
Section 'A' will consist of 3 short answer type questions of 3 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 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 250 to 300 words.
Section 'C' will consist of 2 or 3 long answer type questions of 13 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 in theory course of **Environmental Pollution and Management** would be of 10 marks, based on questions from syllabus.

SEMESTER-V

LAB COURSE FOR SKILL ENHANCEMENT IN ENVIRONMENTAL SCIENCES

(Internal Evaluation)

Course No: UESPS 502 Title: Laboratory Course

Credit:2

Duration of Examination: 3.0 hrs

Marks: 50

LAB WORK

Practical Work:

1. Visit to various areas for listing the sources of pollution – Air (indoor as well as outdoor), water and soil.
2. Impact of vehicular pollution of the road side plants/parapets-change in colour, dust & carbon deposition.
3. Collection and preservation of water and soil samples.
4. Measurement of pH of water sample and physical comparison of sewerage channel and a stream of the area.
5. Visit to wastewater treatment plant, weather station/pollution control board.
6. Demonstration/ Preparation of working model of water/rain harvesting structure.
7. Visit to various industrial units using pollution control devices.
8. Assessment of noise level of different zone- commercial, residential, traffic and silent zone.
9. Questionnaire based assessment of pollution impact on human beings.



Detailed Syllabus
Semester – VI

Course No. PSESTE 601

Credits : 4

Title : **Environmental Hazards: Concept and Management**

Syllabus for examination to be held in
May 2019, May 2020 and May. 2021

Unit 1

Introduction to Hazards and disasters

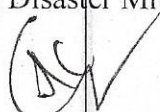
- 1.1 Meaning, Types and nature of Natural and man- made disasters: an introduction
- 1.2, Characteristics, Causes, and general effects of disasters
- 1.3. A Global view of disasters
- 1.4 Disaster Profile of India,
- 1.5 Disaster Profile of J&K

Unit 2 Understanding disasters and their characteristics

- 2.1. Man-Made Disasters: Fires and Forest Fires, Nuclear, Biological and Chemical disasters and Road Accidents
- 2.2. Wind related: Tsunamis, Storm, Storm surge, Tidal waves, Heat and cold Waves.
- 2.3. Hydrological Disasters: Floods and Flash Floods, Droughts, Cyclones,
- 2.4. Geological Disasters: Earthquakes, Tsunamis, Landslides, Avalanches, Volcanic eruptions, Mudflow
- 2.5. Environmental Disasters: Climatic Change, Global warming, Environmental Pollution

Unit 3 Disaster management

- 3.1. The Disaster Management cycle.
- 3.2. Role of Information, Education, Communication and Training
- 3.3. Role of Government, International and NGO Bodies
- 3.4. Role of Information Technology (IT) in Disaster Preparedness
- 3.5. Role of Media in Disaster Mitigation



Note: In Unit-III the basic concept of Disaster Management Cycle has to be discussed in detail.

Reference Books:

1. Disaster Administration and Management: Text and Case studies-S.L. Goel- Deep and Deep Publications.
2. Disaster Management: G.K. Ghosh- APH Publishing Corporation.
3. Disaster Management: S.K. Singh, S.C. Kundu, Shobha Singh A-119, William Publications, New Delhi.
4. Disaster Mitigation: Experiences and Reflections- Pradeep Kumar-Prentice-Hall of India.

5. Note for Theory Paper setter

- a. Theory Question paper will consist of THREE sections 'A', 'B' and 'C'.

Section 'A' will consist of 3 short answer type questions of 3 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 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 250 to 300 words.

Section 'C' will consist of 2 or 3 long answer type questions of 13 marks each out of which candidates have to attempt only ONE . Candidate has to restrict the answers in 500 to 600 words.

Internal assessment test in theory course of **Environmental Hazards: Concept and Management** would be of 10 marks, based on questions from syllabus.



SEMESTER-VI

LAB COURSE FOR SKILL ENHANCEMENT IN ENVIRONMENTAL SCIENCES

(Internal Evaluation)

Course No: UESPS 602

Title: Laboratory Course

Credit:2

Duration of Examination: 3.0 hrs

Marks: 50

Practical Work:

10. Development of Disaster preparedness plans for your institution.
11. Monitoring and evaluation plan for disaster response.
12. Safety tips before, during and after earthquake, floods and fire accidents.
13. Mock Drills.
14. First Aid Training.
15. Understanding of Disaster Management Cycle with the help of case studies.
16. Introduction to fire extinguishing equipments and their operation.

