SAMBALPUR UNIVERSITY

PRIVATE EXAMINATION CELL
JyotiVihar – 768019, Odisha

No. 371 /PEC Date 31.07.26.

To,

All the Nodal Officer,
Private Examination Cell,
Sambalpur University.

Sub: Syllabus of Environmental Studies and Disaster Management for all PG Courses of PEC, 2025-27 batch.

Sir/Madam,

Pleas find enclosed here with the Syllabus of Environmental Studies and Disaster Management for all Post Graduate Courses, the examination is scheduled on Dated 09.08.2026 for wider circulation and information of Students

Thanking you.

Yours sincerely

31.07.2026

Section Officer,
Private Examination Cell

SEMESTER-I For Humanities and Social Science Students

Environmental Studies & Disaster Management

FOR POST GRADUATE COURSES

(2025-27)

CH-2

Section A: Environment

Unit – I Concept of Envioronment, Ecosystem, Biogeochemical Cycling and Pollution (5 periods x 1 hr)

The Environment: The Atmosphere, Lithosphere, Hydrosphere, Biosphere, Anthroposphere (01 period)
Ecosystem: Structure of Ecosystem, Function of Ecosystem, Energy flow in ecosystem. (01 period)
Biogeochemical cycle: The concept of Elemental Cycling; Carbon, Hydrogen, Nitrogen, Oxygen, Phosphorous, Sulphur cycles (01 period)
Pollution: Pollution, Pollutant and Thresholds; Ambient State and Polluted State; Water, Air, Soil, Radiation, Industrial, Noise, Social Pollution (02 periods)

Unit – II Climate Change & Sustainable Development (5 periods x 1 hr)

Drivers of Climate Change: Natural, Human Population Growth, Urbanization, Industrialisation (01 period)
Planetary Scale Changes: Causes, effects, Global Warming, Ozone Depletion, Carbon footprint and Environmental Protection (01 period)
Sustainable Development: Sustainable development concept, sustainable Development Goal (SDGs), Agenda 21 of Rio Earth Summit, Sustainable **Montréal** 2016-2020, COP 26 (01 Period)
Measures for sustainable Development: Recycle, Reuse, Efficiency enhancement, Policy Development, Performance and Management. (02 periods)

Section B: Disaster management

Unit- III Disaster Management (5 periods x 1 hr)

Concept of Disaster: Definition, Types of disasters, Classification of Disasters (01 periods)
Vulnerability Assessment and Risk Analysis: Risk assessment and analysis with respect to various disasters (Flood, Cyclone, Earthquake, Tsunami, Heat waves and Lightning) (01 periods)
Institutional Framework: National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), District Disaster Management Authority (DDMA), National Disaster Response Force (NDRF) and Odisha Disaster Rapid Action Force (ODRAF) (01 periods)
Preparedness Measures: Disaster Management Models; Warning System, Management strategies, Corporate Social Responsibility (CSR) (02 periods)

Unit-IV Public Health Management (5 periods x 1 hr)

Brief idea on Epidemics and Pandemics
Non-communicable diseases with special reference to cardiovascular diseases, Cancer, Diabetes, Hypertension and Obesity and their prevention (01 period)
Communicable diseases with special reference to Covid-19, Dengue, Hepatitis and AIDS, their transmission

(01 period)

Prevention of Epidemic/Pandemic Diseases: Prevention Measures (Quarantine, Sanitization, Personal Protective measures such as Hand washing and use of protective devices, Vaccination); Control Measures (Surveillance, Isolation, Contact Tracing) (01 period)

Life Style management: Diet, Physical Exercise, Yoga and sleeping habit (01 period)

Role of different Sectors in Managing Health Disaster: Role of Government and Non Government agencies in health management. (01 period)

Suggested Books

9. Botkin, D. B. and E. A. Keller. Environmental Studies: The Earth as a Living Planet. Charles E. Merrill Publishing Co., Columbus, Ohio, 506 p.
10. Cunningham, W. and Cumnningham, M. (2017). Principles of Environmental Science: Inquiry and Applications. McGraw Hill Education; 4th edition., 410 p.
11. Dash, M.C. and Dash, S.P. (2009). Fundamentals of Ecology. (2009). McGraw-Hill Education (India) Pvt Limited. 370 p.
12. Miller G.T. (1992). Living in the Environment: An Introduction to Environmental Science. International Thomson Publishing; 7th Ed edition, 768 p.
13. NIDM (2022). Handbook of Disaster Management for Nodal officers, Ministry of Home Affairs, Government of India, New Delhi, 176 p.
14. Smith, K. and Petley, D.N. (2013). Environmental Hazards: Assessing risk and reducing hazards. Routledge (Taylor and Francis Group). London. 478 p.
15. Strahler, A.N. and Strahler, A.H. (1973). Environmental Geoscience: interaction between Natural Systems and Man. Hamilton Publishing Company, California. 511 p.
16. Sunder Lal Vikash (2022). Public Health Management Principles and Practice, CBS Publishers & Distributors, New Delhi, 348 p.

QUESTION PATTERN FOR ESDMH 419 (COURSE STARTS FROM THE SESSION 2022)

Periodical Test: 40 marks

(Internal assessment =20 marks and Home assignments = 20 marks)

Mid-term for 40 marks will consists of 20 marks for two class tests, 10 for assignment, 10 for case study

End term Test: 60 marks

Part-A: 12 marks: Each question 1 mark x 12 questions

(Preferably multiple choice type covering 5 questions from each unit)

Part-B: 48 marks: Question carrying 12 marks will be asked from each unit separately. The distribution of 12 marks will be decided by the paper setter. Suggested patterns of distribution of 12 marks are 12, 8+4, 6 +6, 5+10, 2+3+7, 4+4+4.

(Each question must carry an alternative)