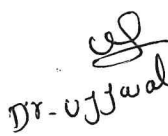
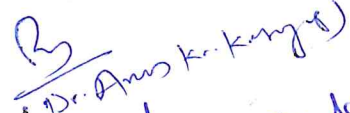
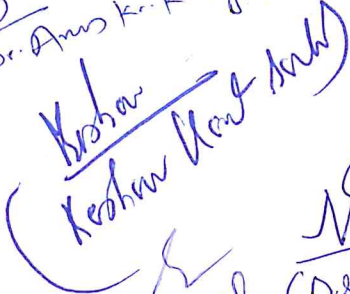
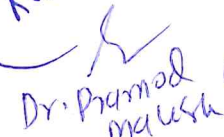
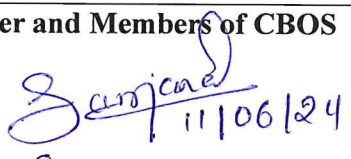
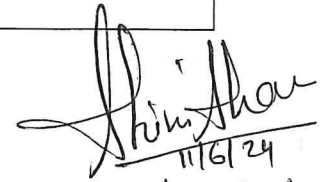
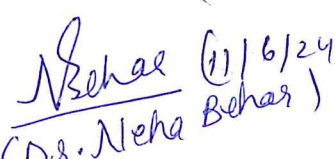
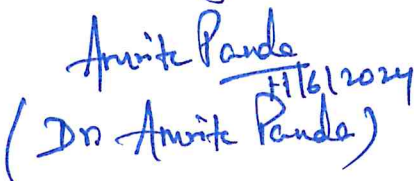


**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)  
COURSE CURRICULUM**

| PART A: INTRODUCTION                                       |  |  |
|--|--|--|
| Program: Certificate Course                                | Semester- I Sem  | Session: 2024-25   |
| 1  | Course Code  | AEC 01   |
| 2  | Course Title   | Environmental Studies  |
| 3  | Course Type  | Ability Enhancement Course (AEC)   |
| 4  | Prerequisite (If Any)  | As per requirement   |
| 5  | Course Outcome (CO)  | At the end of this course, students will be able to –<br>CO 01: relate the basic concept of the environment<br>CO 02: explain environmental alterations<br>CO 03: develop skills in environmental measurement<br>CO 04: examine correction measures of the environment |
| 6  | Credit Value   | 02 C      01 Credit = 15 Hrs. Teaching-Learning  |
| 7  | Total Marks  | Max. Marks: 50      Minimum Pass marks: 20   |
| PART: B CONTENT OF THE COURSE                              |  |  |
| Total No. of Teaching-Learning Periods: 30Hours/ 30Periods |  |  |
| UNIT   | TOPIC (Course Contents)  | No. of Hours   |
| I  | <b>Basic Composition:</b><br>1. Abiotic and Biotic components of the environment<br>2. Biodiversity—Concept, types, and measures about its protection<br>3. Basic concept of Bio-Geo Chemical Cycle<br>4. Energy Flow in an ecosystem  | 07   |
| II   | <b>Alterations in Environment:</b><br>1. Concept and components of the pond ecosystem<br>2. Air pollution and measures for its control<br>3. Water pollution and measures for its control<br>4. Global warming, Climate change, and possible measures  | 07   |
| III  | <b>Measurements of Environmental Components</b><br>1. Soil composition and methods of its analysis<br>2. Water analysis methods for DO, BOD, COD<br>3. Water analysis methods for pH, TDS, Turbidity, Salinity, and Alkalinity<br>4. Information about environmental factors—PM-10, PM-2.5, NO <sub>2</sub> , O <sub>3</sub> | 08   |
| IV   | <b>Application Measures</b><br>1. Useful microbes to control water pollution<br>2. Useful microbes to control soil pollution<br>3. Concept of Biodegradation<br>4. Concept of Phytoremediation   | 08   |
| <b>Key Words</b>   | <b>Ecosystem, Pollution, Climate Change, Biodegradation</b>  |  |

**Name and Signature of Convener and Members of CBOS**

 Dr. Ujjwal Sagar  
 Dr. Anurag K. Kung'u  
 Keshav Keshav  
 Dr. Pramod Malush  
 Dr. Sanjana Bhagat  
 Dr. Shironi Sh  
 Dr. Neha Behar  
 Anvite Panda

## PART-C: Learning Resources

### Text Books, Reference Books, and Others

#### Text Books Recommended –

1. Ecology and Environment, 8<sup>th</sup> Edition, P.D.Sharma, Rastogi Publication, Meerut.
2. Environmental Biology, 2<sup>nd</sup> Edition, P.D.Sharma, Rastogi Publication, Meerut.
3. Environmental Biology and Toxicology, 2<sup>nd</sup> Edition, P.D.Sharma, Rastogi Publication, Meerut.
4. Environmental Studies, 1<sup>st</sup> Edition, S.V.S.Rana, Rastogi Publication, Meerut.
5. Environmental Biotechnology, 1<sup>st</sup> Edition, S. V. S. Rana, Rastogi Publication, Meerut.

#### Online Resources–

- e-Resources / e-books and e-learning portals

#### Online Resources–

- e-Resources / e-books and e-learning portals

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:

Maximum Marks: 50 Marks

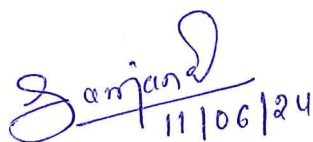
Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

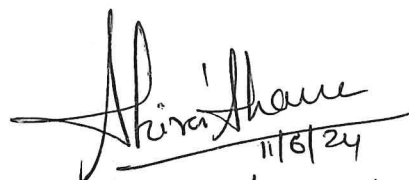
|  |                                  |         |   |
|--|----------------------------------|---------|---|
| Continuous Internal Assessment (CIA):<br>(By Course Teacher) | Internal Test / Quiz-(2):        | 10 & 10 | Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks |
|  | Assignment/Seminar +Attendance - | 05      |   |
|  | Total Marks -                    | 15      |   |

|                          |  |
|--------------------------|--|
| End Semester Exam (ESE): | Two sections – A & B<br>Section A: Q1. Objective – 05 x1= 05 Mark; Q2. Short answer type- 5x2 =10 Marks<br>Section B: Descriptive answer type qts., 1out of 2 from each unit- 4x05 =20 Marks |
|--------------------------|--|

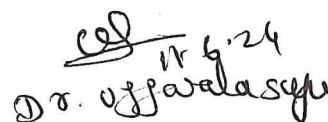
Name and Signature of Convener & Members of CBoS:

  
11/06/24

(Dr. Sanjani Bhagat)

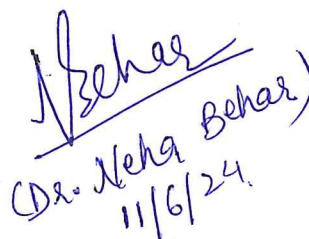
  
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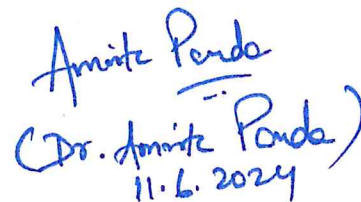
(Dr. Shivani Sharma)


  
11/6/24  
Dr. Ujjwal Singh

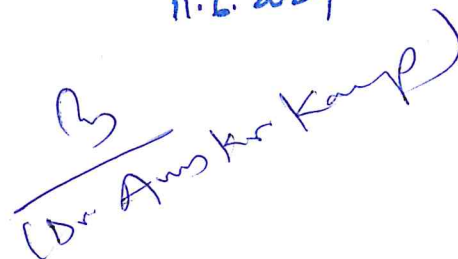
  
11/06/24

(Dr. Shubha Diwan)

  
11/6/24  
Dr. Neha Behar

  
11.6.2024  
Dr. Amite Pande

  
Dr. Pramod Kumar Mahesh

  
Dr. Anurag Kaur