

# **ASSIGNMENT BOOKLET**

**Master of Science (Environmental Science)  
(MSCENV)**

## **Assignments**

**January 2025 to July 2026 Sessions  
(Valid from Jan 2025 to December 2026)  
Elective Courses**

**Tutor Marked Assignments (TMA) for  
MEVE 011; MEVE 012; MEVE 013; MEVE 014;  
MEVE 015; MEVE 016; MEVE 017; MEVE 018;  
MEVE 019**



**School of Inter-disciplinary and  
Trans-disciplinary Studies  
Indira Gandhi National Open University  
Maidan Garhi, New Delhi-110068**

Dear Learner,

Welcome to the Programme M.Sc. (Environmental Science)!

You are required to do one assignment for each Course of the M.Sc. (Environmental Science). Each assignment is a Tutor Marked Assignment (TMA) and carries 100 marks. Each assignment covers the entire course. Answer any five questions in each assignment. All questions carry equal marks. This TMA is concerned mainly with assessing your application and understanding of the course material. Please ensure that you read all the units of the course. It is important that you should write the answers to all the questions in your own words. You should remember that writing answers to assignment questions will improve your writing skills and prepare you for the term-end examination.

This booklet includes assignments for the following courses:

**MEVE 011; MEVE 012; MEVE 013; MEVE 014; MEVE 015; MEVE 016; MEVE 017; MEVE 018; MEVE 019**

It is compulsory to submit the assignments within the stipulated time to be eligible for appearing the term-end examination. The assignments constitute the continuous component of the evaluation process and have 30% weightage in the final grading. Before you write the assignments, first go through the course material and then prepare the assignments carefully by following the instructions pertaining to assignments. Your responses should not be a verbatim reproduction of the textual materials provided for self-learning purposes but it should be in your own words.

If you have any doubt or problem pertaining to the course material and assignments, contact the Programme Coordinator or concerned programme in-charge or Academic Counsellor at your Study Centre for clarification. Once you are able to do the assignment satisfactorily, you will be ready to take the Term-end exam with confidence.

If you still have problems, do feel free to contact us at School of Interdisciplinary and Transdisciplinary Studies.

Wishing you all the best to complete the programme successfully.

**Programme Coordinators**

Prof. Shachi Shah, [sshah@ignou.ac.in](mailto:sshah@ignou.ac.in)

Dr. V. Venkat Ramanan, [vvramanan@ignou.ac.in](mailto:vvramanan@ignou.ac.in)

Dr. Deeksha Dave, [deekshadave@ignou.ac.in](mailto:deekshadave@ignou.ac.in)

**School of Interdisciplinary and Transdisciplinary Studies  
Indira Gandhi National Open University, Maidan Garhi,  
New Delhi-11006**

## INSTRUCTIONS

Before attempting the assignment, please read the following instructions carefully:

1. Read the detailed instructions about the assignment given in the Programme Guide.
2. Write your Enrolment Number, Name, Full Address and Date on the top right corner of the first page of your response sheet(s).
3. Write the Course Title, Assignment Number and the Name of the Study Centre you are attached to, in the centre of the first page of your response sheet(s).
4. Read the instructions related to assignments given in the programme guide.
5. Please note that unless you submit the assignments contained in this booklet within the stipulated time, you would not be permitted to appear for the term-end examination.
6. The top of the first page of your response sheet should be like the following:

NAME: .....

ENROLLMENT NO.: .....

CYCLE OF ADMISSION: .....

PROGRAMME CODE: .....

ASSIGNMENT CODE: .....

COURSE CODE: .....

COURSE TITLE: .....

ADDRESS: .....

CONTACT NUMBER: .....

DATE OF SUBMISSION: .....

## GUIDELINES FOR TMAs

You will find it useful to keep the following points in mind:

- **Planning:** Read the questions carefully. Go through the points on which they are based. Make some points regarding each question and then rearrange these in a logical order. And please write the answers in your own words. Do not reproduce passages from the units.
- **Organisation:** Be a little more selective and analytic before drawing up a rough outline of your answer. In an essay-type question, give adequate attention to your introduction and conclusion. The introduction must offer your brief interpretation of the question and how you propose to develop it. The conclusion must summarize your response to the question. In the course of your answer, you may like to make references to other texts or books as this will add some depth to your analysis.

**Note the following points before you start writing the assignments:**

1. Use only A4 paper size for your assignment and tag all the pages carefully.
2. Write the relevant question number with each answer.
3. You should write the answer in your own handwriting.

**Make sure that your answer:**

- (a) is logical and coherent;
- (b) has clear connections between sentences and paragraphs;
- (c) is written correctly giving adequate consideration to your expression, style and presentation;
- (d) Does not exceed the number of words indicated in the question.

**Submission:** The completed assignment should be sent to the Coordinator of the Study Centre allotted to you. Please read the instructions given in your Programme Guide. These assignment questions are valid for the **January 2025 to July 2026 session**.

- Keep a copy of the assignment answer sheets with you before submission for future reference.
- Answer each assignment on separate sheet.
- It is preferred to write all assignments neatly in your own handwriting. Write your name, course code, enrolment No. and cycle of admission on all the assignments in bold letters.

- Express your response in your own words. You are advised to restrict your response based on the marks assigned to it. This will also help you to distribute your time in writing or completing your assignments on time.

**Remember that you must submit your assignments before you can appear for the Term End Exams. Please remember to keep a copy of your completed assignment, just in case the one you submitted is lost in transit.**

**Good luck with your work!**

# MEVE-013 : ENVIRONMENTAL BIOTECHNOLOGY

## TUTOR MARKED ASSIGNMENT

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|                        |                                                            |
|------------------------|------------------------------------------------------------|
| <b>Course Code</b>     | <b>: MEVE-013</b>                                          |
| <b>Course Title</b>    | <b>: Environmental Biotechnology</b>                       |
| <b>Assignment Code</b> | <b>: MEVE-013/TMA-01/January 2025 to July 2026 session</b> |
| <b>Coverage</b>        | <b>: All Blocks</b>                                        |

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Maximum Marks 100

**5x20=100**

**Note:** This assignment is based on the entire course.

Answer any five questions. All question carries equal marks.

Please write all answers in your own words.

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1. Discuss the applications of biotechnology in environmental management. Write short notes on biomonitoring and biomethanation.
2. Explain the principles involved in trickling filter and activated sludge treatment with suitable diagrams.
3. Discuss the sources and classification of solid waste based on hazardous potential, content and origin. Explain the mechanisms involved in biodegradation of xenobiotics.
4. Discuss the characteristics of hemicellulose and lignin degrading microorganisms and processes involved in biodegradation.
5. Explain the bioleaching processes with suitable examples. Discuss the factors affecting bioleaching process.
6. Explain the salient features of in-situ and ex-situ bioremediation methods. Discuss the factors affecting the process of bioremediation of metals.
7. Explain the salient features of first, second, third and fourth generation of biofuels.
8. Discuss the production methods, applications, advantages and challenges of bioplastics.

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