COURSE TITLE	**TESTING METHODS IN ENVIRONMENTAL AUDIT-II**
COURSE CODE	**01CH0514**
COURSE CREDITS	**1**

Objective:

1 To equip students with practical skills in analyzing key water quality parameters and understanding their environmental implications, focusing on water treatment, contamination assessment, and reusability aspects.

Course Outcomes: After completion of this course, student will be able to:

1 Analyze physical and chemical parameters of water using standard lab techniques.

2 Interpret water quality results and assess reusability implications.

3 Apply practical skills to evaluate water suitability for various applications.

4 Assess the impact of contaminants and treatment effectiveness on water quality.

Pre-requisite of course: Knowledge of basic water quality parameters.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	2	0	0	0	50	50

Contents : Unit	Topics	Contact Hours
Total Hours		

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Experiment 1** Analysis of turbidity in water sample and its implication and reusability aspect	2
2	**Experiment 2** Determination of residual chlorine content in water sample and its implication and reusability aspect	4
3	**Experiment 3** Determination of sulphate content in water sample and its implication and reusability aspect	4
4	**Experiment 4** Determination of Ammonical nitrogen and its implication and reusability aspect	4

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
5	**Experiment 5** Determination of Silica and its implication and reusability aspect	2
6	**Experiment 6** Determination of Phosphate and its implication and reusability	4
7	**Experiment 7** Determination of nitrate content in water sample and its implication and reusability aspect	4
8	**Experiment 8** Determination of dye concentration in water sample and its implication and reusability aspect	4
9	**Experiment 9** Water quality data analysis using MS EXCEL	2
Total Hours		**30**

Textbook :

1 Chemistry for environmental engineering and science (5th ed.). , Sawyer, C. N., McCarty, P. L., & Parkin, G. F. , McGraw-Hill., 2003

References:

1 Standard methods for the examination of water and wastewater,, Standard methods for the examination of water and wastewater,, APHA, American Public Health Association,, 2017

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
10.00	20.00	30.00	30.00	10.00	0.00

Instructional Method:

1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

2 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory

4 Students will use supplementary resources such as online videos, NPTEL videos, ecourses, Virtual Laboratory.

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Supplementary Resources:

1 https://vlab.amrita.edu/index.php?sub=2&brch=193&sim=1548&cnt=1