PaperCode: BS161 /BES162	Paper: Environmental Studies Lab.		L	P	C
PaperID: 99161 / 99162			-	2	1
Teachers Continuous Evaluation:	40 marks	Term End Examinations:	60 Marks		

Instructions:

1. The course objectives and course outcomes are identical to that of "Environmental Studies" as this is the practical component of the corresponding theory paper.
2. The practical list shall be notified by the teacher in the first week of the class commencement under intimation to the office of the office of the Head of Department / Institiution in which the paper is being offered from the list of practicals below. Atleast 8 experiments must be performed by the students

1. Determination of pH, conductivity and turbidity in drinking water sample.
2. Determination of pH and conductivity of soil/sludge samples.
3. Determination of moisture content of soil sample.
4. Determination of Total Dissolved Solids (TDS) of water sample.
5. Determination of dissolved oxygen (DO) in the water sample.
6. Determination of Biological oxygen demand (BOD) in the water sample.
7. Determination of Chemical oxygen demand (COD) in the water sample.
8. Determination of Residual Chlorine in the water sample.
9. Determination of ammonia in the water sample.
10. Determination of carbon dioxide in the water sample.
11. Determination of nitrate ions or sulphate ions in water using spectrophotometer.
12. Determination of the molecular weight of polystyrene sample using viscometer method.
13. Base catalyzed aldol condensation by Green Methodology.
14. Acetylation of primary amines using eco-friendly method.
15. To determine the concentration of particulate matter in the ambient air using High Volume Sampler.

Note:

1. For better understanding of various aspects of environment visits to local areas, depending upon easy access and importance may be planned to any nearby river, forest, grassland, hills and students should write a report based on their observations.
2. At least 8 Experiments out of the list shall be performed by the students. Teachers may introduce new experiments for the class in addition to above

References:

1. *Vogel's Text Book of Quantitative Chemical Analysis* by G.H. Jefferey, J. Bassett, J. Mendham, and R.C. Denney, Logmaan Scientific & Technical, 1989.
2. dst.gov.in/green-chem.pdf (monograph of green chemistry laboratory experiments).
3. *Essentials of Experimental Engineering Chemistry* by S. Chawla, Dhanpat Rai & Co., 2008.
4. Experiments in Applied Chemistry by S. Ratan, S.K. KAtaria & Sons, 2003.
5. *Principles of Environment Science: Enquiry and Applications* by W. Cunningham and M. A. Cunningha, Tata McGraw Hill, 2003.
6. *Perspectives in Environment Studies* by A. Kaushik and C. P. Kaushik, New Age Int. (P) Pub., 2013.