Semester III- VSC (Instrumentation and Techniques in Environmental Science)

Course Name: VSC (Instrumentation and Techniques in Environmental Science) Course Code: SIUESVS211 Credits: 2 Type: Practical		
Expected Course Outcomes On completion of this course, students will be able to 1. Learn the basic principles, construction and working of different ecological instruments. 2. Apply chromatographic techniques for separation of biomolecules in research and in industries. 3. Demonstrate and apply concepts of optical methods with a better understanding of the use of these instruments in environmental science .		
Unit I (Practical)	**Instrumentation and Techniques in Environmental Science**	
	1. Study of pH meter, conductivity meter, turbidity meter, spectrophotometer, FES, AAS. 2. Separation of a mixture of chlorophyll pigments by paper chromatography. 3. Separation of a mixture of carotenoids by TLC. 4. Study of different Soil and water sampling techniques. 5. Physical and chemical analysis of soil. 6. Determining the Concentration of a Solution using Beer Lambert Law. 7. Basic microbiological techniques i) Maintaining aseptic conditions ii) Preparation of agar plates iii) Sectioning and staining of given material	

References

1. Andreas Hofmann, S. C., n.d. *Wilson And Walker's Principles And Techniques Of Biochemistry And Molecular Biology.* 8 ed. s.l.:s.n.
2. GURDEEP R. CHATWAL, S. K. A. G. R. C. S. K. A., n.d. *Spectroscopy (Atomic and Molecular).* s.l.:Himalaya Publishing House.

3. Joanne M. Willey, C. J. W. L. S., n.d. *Prescott's Microbiology.* 8 ed. s.l.:McGraw-Hill Education.

4. Keith Wilson, K. H. G., n.d. *Biologist's Guide to Principles and Techniques of Practical Biochemistry.* 3 ed. s.l.:Hodder Arnold.

5. R., A., 2014. *Textbook of Microbiology.* 10 ed. s.l.:Universities Press.

6. Veerakumari, L., n.d. *Bioinstrumentation.* s.l.:MJP Publishers.