Programme: M. Sc. (Marine Sciences)
Course Code: MSC 166 Title of the Course: Marine Chemistry Practical I
Number of Credits: 01
Effective from AY: June 2018-19

Prerequisites for the course:	Degree of Bachelor of Science of this University or an examination of any other University recognized as equivalent.	
Objective:	This course deals with the Analytical Chemistry of Seawater.	
Content:	1. Introduction to good laboratory practices in Chemical Lab and introduction to sampling, sub-sampling, storage and analysis of dissolved trace constituents of seawater (6 hrs; Ref 1) 2. Estimation of salinity of seawater by the Mohr- Knudsen chlorinity titration method (6 hrs; Ref 1) 3. Determination of dissolved O_2 of seawater by Winkler's iodometric titration method (6 hrs; Ref 1) 4. Determination of pH of seawater by potentiometric method using pH meter and determination of total alkalinity of seawater by potentiometric titration using pH meter (6 hrs; Ref 1) 5. Spectrophotometry: Verification of Beer's law (6 hrs; Ref 2)	24 hours
Pedagogy:	Laboratory experiments/ field studies	
References/ Readings	1. Methods of Seawater Analysis, 1983, 1999 – Grasshoff, K., Ehrhardt, M. and Kremling, K.; VerlagChemie, Weinheim. 2. Instrumental Methods of Chemical Analysis, 1981 – Ewing, G. W.; McGraw-Hill, New York. 3. A Manual of Chemical and Biological Methods for Seawater Analysis, 1984 – Parsons, T. R., Maita, Y. and Lalli, C. M.; Pergamon Press, Oxford.	
Learning Outcomes	1. Develop analytical skills to determine the concentrations of various chemical parameters, such as salinity, dissolved O_2, pH and alkalinityin seawater/aqueous systems and to use spectrophotometer for the analysis of colored solutions. 2. Apply techniques to seawater/natural waters to study the biogeochemistry of the marine environment/aquatic systems.	