

Programme: M. Sc. (Marine Sciences)

Course Code: MSO 376

Number of Credits: 01

Effective from AY: June 2018-19

Title of the Course: Marine Geochemistry II

Prerequisites for the course:	Marine Geology and Marine Chemistry	
Objective:	1. To study the input of DOM from various sources into the Sea (atmosphere, rivers and marine sediments). 2. To understand the processes by which DOM is removed from sea water. 3. To study the complex formation of different metals with DOM in sea water.	
Content:	Chemical and biological aspects of dissolved organic matter in the sea – Sources of supply and processes of removal of dissolved organic matter. Radioactivity – Classification – Primary, cosmogenic and artificial radio nuclides; distribution and occurrence of radionuclides, their properties in the marine environment and their decay series – Sampling and storage of radionuclides, radio chemical separation- Applications of radionuclides to the geochronology of marine sediments and rocks – Carbon dating methods in marine sediments, oceanic mixing and residence time.	12 hours
Pedagogy:	Lectures/ Tutorials/ assignments/self study.	

References/ Readings	1. Introduction to geochemistry, 1967 - Krauskopf, K.B., Mc.Graw-hill, Kogasuksha Ltd, International student edition. 2. Geochemistry, 1962 – Goldschmidt, V.M., Clarendon press. 3. Principles of geochemistry 1966 – Mason, B. 3 rd edition published by John Wiley and Sons, Inc, New York. 4. Chemical oceanography (Vol. 1 & 3), 1975 – Riley, J.P. and Skirrow, G.(eds). Academic Press, New York. 5. Introduction to geochemistry, 1995 – Krauskopf, K.B. and Bird, Mc-Graw Hill, Kogasuksha Ltd, International student edition. 6. The geochemistry of natural waters, 1982 – Drever, J.I. 3 rd Edition, Prentice Hall. 7. Estuarine chemistry, 1976 – Burton, J.D. and Liss, P.S., Academic Press, New York. 8. Ocean chemistry and deep sea sediments, 1989 – Open University Course Material. 9. Aquatic chemistry, 1996 – Stumm, W. and Morgan, J.J., Wiley - Interscience, New York. 10. Aquatic surface chemistry, 1987 – Stumm, W., Wiley – Interscience, New York. 11. Marine Chemistry, 1969 – Horne, R.A. Wiley - Interscience.	
Learning Outcomes	1. These studies would help to understand the rate at which DOM and removed from sea water by various processes. 2. These studies give an insight into how DOM can influence the state of inorganic compounds in sea water and 3. These studies would help in identification of organisms which use DOM as a source of an alternate food in the absence of essential nutrients.	