Programme: M. Sc. (Marine Sciences)
Course Code: MSC 463 Title of the Course: Estuarine Biology
Number of Credits: 01
Effective from AY: June2018-19

Prerequisites for the course:	Marine Biology and Marine Ecology	
Objective:	This course develops concepts pertaining to carbon dioxide cycle in the estuarine and coastal environment and elucidate role of anthropogenic inputs on the carbon cycle.	
Content:	Primary productivity in coastal and estuarine waters, Oceanic carbon cycle, production and transformation of organic matter, external and internal sources of carbon, Dissolved Organic Matter – sources, aerobic and anaerobic environments, losses, decomposition, labile and refractory phase, fermentation, nitrate and sulfate reduction, methanogenesis, DOM as biological activity.	12 hours
Pedagogy:	lectures/ tutorials/assignments/self-study	
References/ Readings	1. Estuarine Ecology. 2nd Edition. – K. R. Dyer, John Wiley and Sons. 568 pages. 2. The Biology of Estuarine Management. Wilson, J. 2012. Springer science and business media. 204 pages 3. Elements of Marine ecology (4thEdition), 1982 – Tait, R.V. and Dipper, F. Butterworth-Heinemann. 4. An introduction to Marine Sciences, 1988 – Meadows, P.S. and Campbell, J.J. John Wiley and Sons. 5. Textbook of Marine Ecology, 1989 – Nair, N.B. and Thampy, D.M. Macmillan 6. Advances in marine biology, Vol. 20, 1982 - Academic Press Ltd. New York. 7. Advances in marine biology, Vol. 36, 1999 – Press, New York 8. Marine Biology – An ecological approach 6th ed), 2005 – Nybbakken, J. W and Bertness, M. D. Pearson/Benjamin Cummings	
Learning Outcomes	Processes related to the carbon cycle and productivity in the marine environment	