Programme: M. Sc. (Marine Sciences)
Course Code: MSO 372 Title of the Course: Marine Microbial Ecology II
Number of Credits: 01
Effective from AY: June2018-19

Prerequisites for the course:	Students who have undergone courses of Semester I and II of Marine Sciences.	
Objective:	To provide basic information and concepts of marine microbiology and its importance. Further, also enables identification of microbes from the marine environments.	
Content:	Sampling strategies for molecular biological analysis; Meta-genomic analysis; Principles and applications of TFF for microbial molecular analysis; DNA/RNA extraction, principles and methods; Principles and applications of PCR; GEL electrophoresis, DNA purification and visualization techniques; Bioinformatics for marine molecular analysis – principles of phylogenic tree, BLAST analysis, search tools; sequence data base; Application of different statistical test (Shannon weaver's index, simpson index, species richness, Chao, ACE indices and Leibshuff technique) for microbial biodiversity analysis.	12 hours
Pedagogy:	lectures/ tutorials/assignments/self-study	
References/ Readings	1. Marine Microbial Diversity: the key to Earths habitability, 2005 - Hunter – Cevera, J. Karl, D. and Buckley, M., American Academy of Microbiology. 2. Ocean and Health: Pathogens in the marine Environment, 2005 - Belkin S. and Colwell, R. R.,Springer – Verlag, New York. 3. Marine Microbiology: Ecology and Applications (2nd edition), 2011 - Munn, C. Garland Science, Taylor and Francis group, NY. 4. Taxonomic scheme for the identification of marine bacteria, 1982 - Oliver, J. D., Deep Sea Research Part A., Oceanographic Research Papers, 29 (6); 795 – 798. 5. Marine Ecological Processes (2nd edition), 1995 - Valiella I., Springer – Verlag, New York.	
Learning Outcomes	Develop and provide information on the marine microbial ecology and enables applications of microbiology to understand ecological processes.	