Name of the Programme: M. Sc.Marine Sciences
Course Code: MSC 526
Title of the Course: Marine Ecology Practical
Number of Credits: 01
Effective from AY: 2022-23

Prerequisites for the course:	Degree of Bachelor of Science of this University or an examination of any other university recognized as equivalent.	
Objective:	To elucidate the methods of estimating water quality/ environmental parameters and the use of different techniques to address various issues in Marine Ecology.	
Content:	Estimation of primary production by using light and dark bottle method (6 hours; Reference 1) Estimation of chlorophyll and phaeo-pigments in seawater sample using a spectro-photometric method (6 hours; Reference 2) Estimation of total organic carbon in seawater and/ or sediment samples (6 hours; References 3, 4). Designing of an experimental set-up to study uptake of oxygen by fish in the laboratory (6 hours; Reference 5). Computation of species diversity (H', J and D) indices using the data of phytoplankton/ zooplankton analysis and their implications in ecological studies (6 hours; Reference 6).	30 hrs.
Pedagogy:	Laboratory techniques, designing of experiments, computations and data interpretation.	
References/ Readings:	1.Selvaraj, G.S.D. (2005). *Estimation of primary productivity (modified light and dark bottle oxygen method).* In G.J. Parayannilam (Ed.), *Mangrove ecosystems:A manual for the assessment of biodiversity* (pp. 199-200). CMFRI Special Publication No. 83, Kerala, India. 2.Aminot, A., Rey, F. (2001). Chlorophyll a: Determination by spectroscopic methods (pp. 17 pp). ICES Techniqnes in Marine Environmental Sciences. No. 30. 3.Dickson, A.G., Sabine, C.L., & Christian, J.R. (Eds.) (2007) *Guide to best practices for ocean CO_2 measurement.* Sidney, British Columbia, North Pacific Marine Science Organization, (pp. 191), (PICES Special Publication 3; IOCCP Report 8). DOI: https://doi.org/10.25607/OBP-1342 4.El Wakeel, S.K., Riley, J.P. (1957). Determination of organic carbon in the marine muds. *Journal Du ConseilIntrenational Pour L'exploration De La Mer*,*22*, 180–183. 5.Bolduc, M., Lamarre, S., Rioux, P. (2002). A simple and inexpensive apparatus for measuring fish metabolism. *Advances in Physiology Education26*(2), 129-132. 6.Begon, M., Mortimer, M. & Thompson, D. J. (Eds.) (1996). *Population ecology: A unified study of plants and animals* (3rd ed). Wiley-Blackwell.	
Course Outcome:	1. To analyze water/sediment quality and estimate productivity using standard methods.	