



The University of Hong Kong
School of Biological Sciences

**Qualifying
Seminar**

Understanding drivers of temporal and spatial variation of seagrass ecological functions in Hong Kong

Date: 24th January 2025

Time: 01.00 pm HKT

Venue: 6N-11 and Zoom



About the speaker:

Chanaka Premarathne is a PhD candidate in the Integrative Biology & Evolutionary Ecology Research (iBEER lab) supervised by Prof. Juan Deigo Gaitan-Espitia.



Abstract:

Seagrass meadows provide a wide range of ecosystem services, such as nitrogen cycling, biodiversity enhancement, coastal protection, and carbon storage. However, both seagrass health and their ecological functions are currently threatened by rapid environmental changes (e.g., heatwaves, typhoons and storms) caused by accelerated human activities and climate warming. Despite their significance, research on the responses of seagrass meadows to the changed weather patterns and extreme events is lacking. In my research, I am focusing on two main aspects: i) Seagrass health in response to varied temperature patterns. I am using a holistic approach to investigate the thermal capacity of seagrass by evaluating the LT50 of seagrass for the first time, utilizing photosynthetic parameters, leaf membrane stability and regulation capacity. ii) Blue carbon storage in response to extreme events. I am investigating the effect of different weather patterns and extreme events on the turnover of organic carbon pools (i.e., labile and recalcitrant pool) in sediment within seagrass meadows. This analysis aim to enhance future modelling efforts for seagrass distribution and habitat suitability, thereby supporting ecosystem management initiatives to sustain current seagrass meadows and guide restoration efforts to expand seagrass habitats to their historical levels.