



UNIVERSITY OF RUHUNA
FACULTY OF FISHERIES AND MARINE SCIENCES & TECHNOLOGY

Bachelor of Science Honours in Fisheries and Marine Sciences Degree
Bachelor of Science Honours in Marine and Freshwater Sciences Degree

Level III Semester II Examination – April/ May 2025

OCG 3292 Ocean Modelling

Time: 2 hours

Answer only four (04) questions

- 1)
 - a) What is an ocean model? (5 marks)
 - b) What is the main difference between inertial and non-inertial reference frames? (5 marks)
 - c) Briefly discuss how climate models contribute to human welfare. (15 marks)

- 2) Write short notes on the following.
 - a) Navier-Stokes equation (12.5 marks)
 - b) Coriolis force depends on both latitude and the velocity of a moving object. (12.5 marks)

- 3) What challenges can arise during model validation, and how can they impact the accuracy and reliability of model predictions? (25 marks)

- 4) Explain the importance of data assimilation in predictive modelling. (25 marks)

- 5) Although there has been good progress in climate modeling, there are still limitations and challenges. Justify this statement by focusing on ocean models. (25 marks)

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