MARINE COASTAL AND DELTA SUSTAINABILITY FOR SOUTHEAST ASIA

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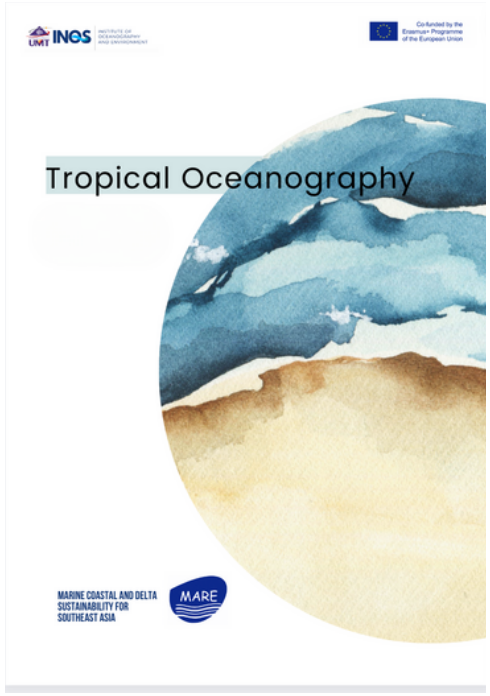
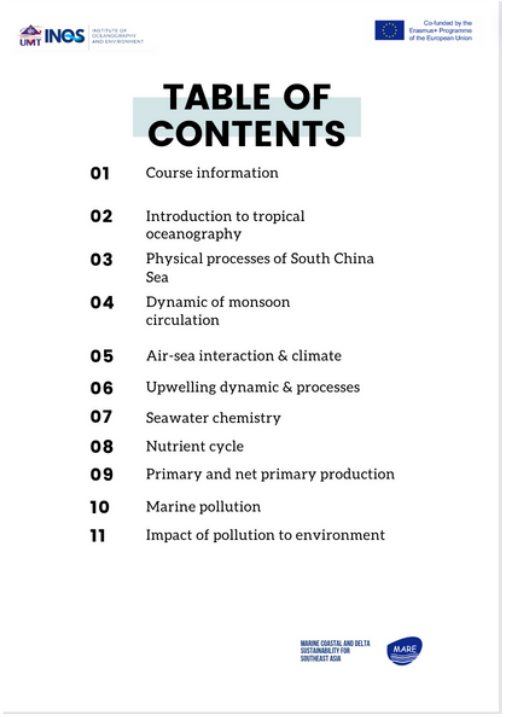
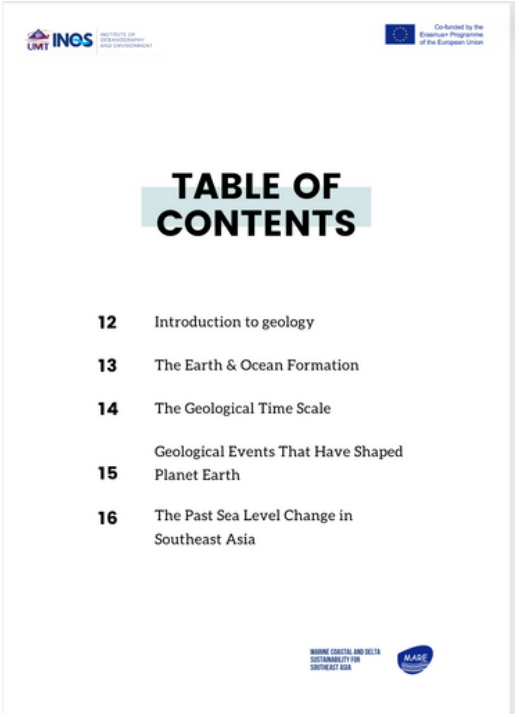
INSTITUTE OF OCEANOGRAPHY AND ENVIRONMENT

# OCN 5003 TROPICAL OCEANOGRAPHY (LECTURE NOTES)

COURSE DEVELOPERS: MOHD FADZIL AKHIR, ONG MENG CHUAN, FATIN IZZATI MINHAT & NUR HIDAYAH ROSELI



## PREFACE

This lecture discusses ocean physico-chemical and bio-geochemical processes, atmosphere and ocean interaction, and ocean productivity in the tropical regions, as well as the factors affecting the oceanographic system, ocean pollution and geomorphology changes. The course concludes with discussions on climate change and the connection between human activity and the current warming trend. Teaching methods includes online-teaching, video lecture, tutorial, and group discussion. The student's learning methods include case study, team/ individual research assignment and written report.

This course material focuses on the field of geological oceanography, a component of the tropical oceanography course. The geological oceanography is a dynamic and multidisciplinary field that explores the intersection of geology and oceanography to better understand our planet's history and its ongoing processes. This interdisciplinary field of study combines principles of geology and oceanography to understand the geological processes that shape the ocean floor and its history.

This course is open to all postgraduate students that registered with UMT both Master (MSc.) and Doctor of Philosophy (Ph. D).

## AUTHOR'S BIOGRAPHY

Professor Dr. Mohd Fadzil Akhir is a distinguished author and esteemed Director of the Institute of Oceanography and Environment at Universiti Malaysia Terengganu. With his vast expertise in the field of physical oceanography and climate modeling, he has made significant contributions to our understanding of the Earth's complex marine systems.
As a renowned researcher, Professor Dr. Akhir's work focuses on unraveling the intricacies of the world's oceans and their impact on climate patterns. Through his innovative approaches and cutting-edge methodologies, he has gained valuable insights into the dynamics of oceanic processes and their role in shaping our planet's climate.

Associate Professor Dr. Ong Meng Chuan is a lecturer in the Faculty of Science and Marine Environment, Universiti Malaysia Terengganu. His research focusses on the metal content in marine sediment and application in pollution monitoring. Apart form sediment Dr. Ong Meng Chuan also work with living or organisms samples such as fishes, crustaceans, molluscs and seaweeds, detecting the accumulation of metal in these organisms.

Dr. Fatin Izzati Minhat is a lecturer in the Faculty of Science and Marine Environment at Universiti Malaysia Terengganu. With six years of teaching experience, Dr. Minhat has established herself in the field of micropaleontology and palaeoecology. As a passionate researcher, Dr. Minhat's work centers around the fascinating world of benthic foraminifera and their role in interpreting past sea level and climate change. Her research insights have shed light on the intricate relationship between these microscopic organisms and our ever-changing environment.