Marine Coastal and Delta Sustainability for Southeast Asia

Co-funded by the Erasmus+ Programme of the European Union

MKAK 1063 : WATER QUALITY MANAGEMENT AND ASSESSMENT
COURSE DEVELOPER : DR SHAMILA AZMAN

Chapter 1	1.1 Introduction: Chemical, physical and biological characteristics of aquatic system
Chapter 2	2.1 River Water Quality Monitoring 2.1.1 Stations and frequency selection 2.1.2 Monitoring of physical and chemical parameters 2.1.3 Bio-assessment of rivers
Chapter 3	3.1 Bio indicators and criteria
Chapter 4	4.1 Assessment, remediation, planning and management and post audit/ monitoring strategies
Chapter 5	5.1 Integrated river basin management
Chapter 6	6.1 Formation of lakes; Lake ecosystem, Lake Morphometry, Thermal Stratification
Chapter 7	7.1 Physical & chemical properties of lake and reservoir 7.2 Eutrophication, Prevention & Control
Chapter 8	8.1 Lake and reservoir monitoring
Chapter 9	9.1 Types and function; Role of wetland in water quality management
Chapter 10	10.1 Wetland biogeochemistry: Treatment process mechanism for nutrient and heavy metal 10.2 Constructed wetland system – FWS and SF
Chapter 11	11.1 Ecosystem Services and Biodiversity Conservation
Chapter 12	12.1 Coastal Water Management 12.2 Coastal water quality issues; impacts from watershed development, and coastal management techniques
Chapter 13	13.1 Marine Biological Resources, Ecosystem Based Management and Aquaculture Management
Chapter 14	14.1 Monitoring Estuarine and Marine Water Quality

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PREFACE

This course is a mandatory course with 3 credits (4 ECTS), offered specifically to Master of Engineering (Environmental Management) students; and was developed by Faculty of Civil Engineering, Universiti Teknologi Malaysia.

This course is designed to expose students to current trends and various aspects of water quality assessment and management for river catchments, lakes, reservoirs, wetlands, and marine ecosystems.

It tackles problems involving water pollution and its impacts on the environment and legislation. Water quality monitoring projects carried out by students will enable the application of proper sampling and monitoring methods.

At the end of the course, students will be able to assess water quality problems and plan mitigation and control measures for water pollution.

AUTHOR'S BIOGRAPHY

Dr. Shamila Azman has 21 years of experience in teaching at the Faculty of Civil Engineering, Universiti Teknologi Malaysia. She is involved in environmental management, especially in the field of water quality monitoring and treatment. As a researcher, Dr. Shamila has worked closely with the Ministry of Natural Resources, Environment, and Climate Change on the Malaysia Environmental Performance Index since 2010. She also volunteers for youth and community programmes, especially on issues relating to water management and river restoration activities.

AUTHOR'S BIOGRAPHY

AP Dr. Mohd Ismid Mohd Said is a marine biologist with more than 30 years of experience in water quality management. His work involves water quality management and bioassessment in freshwater and marine ecosystems. He is dedicated to studying rivers and their conservation and investigating various aspects such as pollution sources, restoration efforts, ecological monitoring, and sustainable management practises to ensure the health and sustainability of river ecosystems. To date, 20 postgraduate students have graduated under his supervision.

REFERENCE

1.Canter, L. W. 2018. River Water Quality Monitoring. Boca Raton: CRC Press

2.Chapman, D, 1998, Water Quality Assessments: A Guide to The Use of Biota, Sediments and Water in Environmental Monitoring, New York: Taylor and Francis

3.Ahuja, S., 2013. Monitoring Water Quality: Pollution Assessment, Analysis, and Remediation. Waltham: Elsevier.