

INTRODUCTION TO RIVER WATER QUALITY MODELING



1& 2 DECEMBER 2026



8.30 A.M - 5.30 P.M



**KELAB GOLF NEGARA
SUBANG**

OVERVIEW OF TRAINING

WASP allows the user to investigate 1, 2, and 3 dimensional systems, and a variety of pollutant types. The time varying processes of advection, dispersion, point and diffuse mass loading and boundary exchange are represented in the model. WASP also can be linked with hydrodynamic and sediment transport models that can provide flows, depths velocities, temperature, salinity and sediment fluxes.



**TRAINERS :
IR. DR. ZAKI ZAINUDIN**

OBJECTIVES

- To introduce fundamentals of river water quality modeling using the WASP8 modelling package.
- To give hands-on exposure to participants in developing and applying WASP8 river model.
- To conduct river water quality impact assessment using the WASP8 modeling package.

WHO SHOULD JOIN

Consultants, engineers,
researchers, scientists, students

TRAINING FEE:

- Member = RM800
- Non-Member = RM1000
- Individual Membership + Training Fee = RM1050
- HRDC Claimable + Member = RM900
- HRDC Claimable + Non-Member = RM1000
- HRDC Claimable + Individual Membership + Training Fee = RM1150

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TRAINER INFORMATION

Ir. Dr. Zaki Zainudin is a Professional Engineer with the Board of Engineers Malaysia (BEM), Chartered Engineer (CEng) with the Engineering Council, UK and Chartered Environmentalist (CEnv) with the Society for the Environment (SocEnv, UK). He is often a source of reference for various organizations on surface water quality management; such as being an expert panelist for the Department of Environment Malaysia (DOE, EIA, Water and Marine units) and is advisor to many prominent environmental and engineering firms. He has conducted various workshops and talks on Water Quality and Modeling at both local and international venues. Zaki is also on the Management Committee of the International Water Association (IWA), Watershed and River Basin Management (W&RBM) Specialist Group.

TENTATIVE PROGRAMME

DAY 1

8:30am – 10:00am	Introduction to Water Quality Modeling Covers conceptualization behind water quality models, current existing models, including its theoretical aspects, as well as history, application and limitations.
10:00am – 10:30am	BREAK
10:30am – 12:30am	Introduction to Water Quality Modeling and the Water Quality Analysis Simulation Program (WASP8) Concept of water quality models, steady state, dynamic modeling, existing models, theoretical aspects, data requirements, application and limitations. Model package installation, introduction to WASP user interface, box model approach, segments, model preparation, assumptions, applications of dynamic water quality modeling, WRDB Graph post-processor.
12:30pm – 2:00pm	LUNCH BREAK
2:00pm – 3:30pm	WASP Data Input Data input and model development; advanced eutrophication and toxicant modules, state variables, segmentation, transport processes, WASP kinetics and constants, time functions, flows, boundary conditions and pollution loads.
3:00pm – 3:30pm	BREAK
3:30pm – 5:00pm	Model Calibration & Validation Model calibration ; adjustments to model to achieve optimal conditions, i.e., matching real world conditions. Data interpretation and conceptual analysis, impact assessment proceedings, model output analysis and data transfer.

DAY 2

8:30am – 10:00am	<i>Individual Exercise : Scenario Design</i> Hands-on modeling practice for participants.
10:00am 10:30am	BREAK
10:30am –12:30pm	<i>Individual Exercise : Scenario Design (cont.)</i> Hands-on modeling practice for participants.
12:30pm – 2:00pm	LUNCH BREAK
2:00pm – 3:30pm	<i>Individual Exercise : Data Extraction, Analysis, Interpretation and Reporting</i> Output data extraction, scenario analysis (water quality and in-stream loading), impact assessment, river rehabilitation.
3:00pm – 3:30pm	BREAK
3:30pm – 5:00pm	<i>Case studies</i> Review and discussion of previous case studies