Registration Fees

- The Course fee of **RM 400/-** per person covers lecture notes, lunches and refreshments.
- All cheques should be made payable to :

BENDAHARI
UNIVERSITI TEKNOLOGI MALAYSIA

and mail to the Secretariat at the address below.

Enquiries

For more information please contact us at :

COASTAL & OFFSHORE ENGINEERING INSTITUTE
Universiti Teknologi Malaysia
54100 Jalan Semarak, Kuala Lumpur

☎T : 03-26154370 🖷F : 03-26918109
✉ anisa@ic.utm.my ✉ asyatie@ic.utm.my

Note : The Organiser reserves the right to make changes where necessary to the programme herein.

REGISTRATION FORM *(Please print or use block letters)*

Two Days Short Course on
'INTRODUCTION TO SEDIMENT MOTION IN OPEN CHANNELS AND MORPHOLOGY'
28-29 August 2013

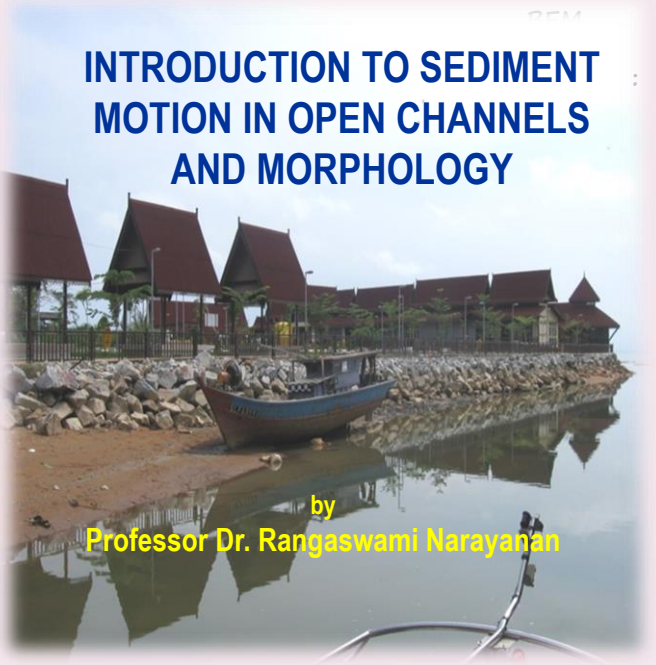
Name : (1) ..... E-mail : .....
(2) ..... E-mail : .....
(3) ..... E-mail : .....
Organisation : .....
Address : .....
Tel. No : ..... Fax No. : .....
Type of Payment : Cheque No..... amounting to **RM 400/-** per person as registration fees is enclosed.
Date : ..... Signature .....

The organisers reserve the right to make amendments or cancel the course in the event of unforeseen circumstances.

BEM Approved
CPD HOURS : 12

DOE Approved
CPD HOURS : 11

Two Days Short Course on



28-29 August 2013

Venue :

Bilik Seminar 1, BATC
Universiti Teknologi Malaysia
Kuala Lumpur

COASTAL & OFFSHORE ENGINEERING INSTITUTE
Universiti Teknologi Malaysia
Jalan Semarak, 54100 Kuala Lumpur

Introduction

Sediment motion is of interest to many disciplines such as civil engineering, geology and coastal engineers. This field has been actively researched literally over centuries. Many empirical equations have been derived essentially from laboratory experiments with uniform flows. With the advent of numerical techniques, the sediment transport and the morphology of rivers, reservoirs, coastal zones etc., are studied over short, medium and long terms.

This introductory course aims to give a simple treatment of motion of cohesionless sediments in uniform flows in open channels keeping derivations to a minimum. Some aspects of cohesive sediments will also be considered. This course will not deal exhaustively with empirical equations for sediment laden flow but to restrict to the ones that are popular. Most of the concepts will be supported by examples. It will also develop simple one-dimensional morphological model and discuss just briefly the more complicated models. It is hoped that this short course will give a good understanding of sediment motion in open channels and form the basis for further study of this challenging, at the same time fascinating subject of major importance to hydraulic engineers.

Course Instructor

Dr. R Narayanan was formerly from the Department of Civil and Structural Engineerng, UMIST, now the University of Manchester, Manchester, U.K. Currently he is a Visiting Professor in the University of Kiel, Germany.

He has vast experience in the field of Hydraulic Engineering, and has supervised a number of Ph.D and M.Sc students. His research spans cavitation, sediment motion, hydraulic jump, forces on hydraulic structures and flow around subsea pipelines leading to a number of publications in journals and international conference proceedings. He is a reviewer for a number of international journals of hydraulics/fluid mechanics, and was a peer reviewer for the grant awarding body EPSRC in U.K. He has given research seminars in the U.S.A, Canada, Turkey, India and Malaysia. He was a Visiting Research Associate Professor in Concordia University, Montreal, Canada and Visiting Professor in Universiti Teknologi Malaysia, Johor Bahru and Universiti Teknologi Petronas, Malaysia.

He has carried out a considerable amount of consultancy work for the industry in the U.K. He is a member of the Editorial Board of the Malaysian Journal of Civil Engineering. He is a co-author of the book entitled “Hydraulic Structures” which is on its Fourth Edition.

Course Programme

SESSION 1 – Introduction
- Implications of sediment motion to engineering. The subject from 1980’s until now.
- Steady uniform flows in rigid open channels : bed shear stress, mean friction factor, Chezy’s and Manning’s equations

SESSION 2 – Turbulent flows in open channel
- Turbulent flows in rigid channels : mean velocity distributions, roughness, shear velocity
- Friction factor and Chezy’s coefficient

SESSION 3 – Initiation of Sediment Motion
- Physical properties of sediments : cohesionless, cohesive
- Critical shear stress; horizontal and sloping channels, banks

SESSION 4 – Modes of sediment transport
- Bed and suspended loads including sediment transport equation
- Examples

SESSION 5 – Sediment transport capacity
- Total sediment load
- Examples

SESSION 6 – Bed forms and friction
- Friction in alluvial channels : two approaches
- Two approaches, examples

SESSION 7 – Morphological model for rivers
- One dimensional hydraulic equations
- Erosion equation

SESSION 8 – Morphological model cohesive sediments
- Erosion equation for cohesive sediment
- Concluding remarks : Accuracy of computation, measurements and experience

Registration Details

The closing date for application is **17 August 2013.** Photostat copies of registration forms are acceptable.

No refund of fees will be made but a replacement of participants is allowed.