IMPORTANT NOTES

- The deadline for registration in the one-day course is 15th of March 2015;
- The number of participants is limited to 30;
- If you are interested in attending this course you can send an email to damworld@lnec.pt or register at http://dw2015.lnec.pt/registration_form.html;
- The organization may decide to cancel the course if a minimum number of participants is not achieved.

REGISTRATION FEE

One-day Course **250 Euros**

Participants will receive a comprehensive set of notes, articles and documentation. Lunch and refreshments are included in the registration fee.

PAYMENT

Bank Transfer

Account holder: FUNDCIC

IBAN: PT 50 0018 0365 002000 10582 22

SWIFT code: TOTAPTPL

Santander Totta – Bank • Largo Frei Heitor Pinto 7-A/B • 1700-204 LISBOA

Please send proof of payment to fundcic@lnec.pt with the participant name.

Credit Card / PayPal

at http://dw2015.lnec.pt/registration.html

CONTACTS

LNEC | Assistance office to the organisation of meetings
Dam World 2015
Av. do Brasil 101 • 1700-066 LISBON
tel.: (+351) 21 844 33 61
fax: (+351) 21 844 30 26
e-mail: dw2015@lnec.pt
dw2015.lnec.pt

dam world 2015

Second International **Dam World** Conference

PORTUGAL • LISBON • LNEC
April 21-24, 2015

One-day course

Failure assessment and emergency preparedness of dams

20th April 2015

LNEC LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

IBRACON Instituto Brasileiro do Concreto

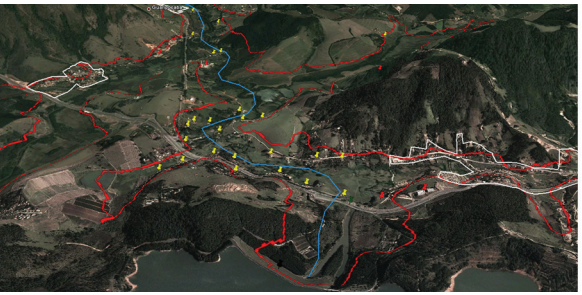
dw2015.lnec.pt

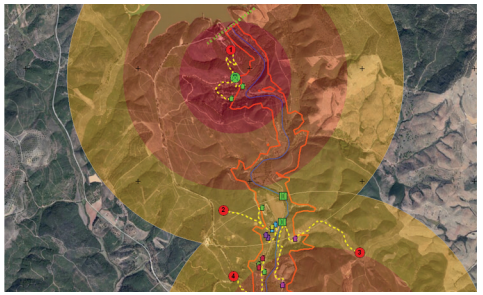
ABOUT THE COURSE

Effective Emergency Action Plans (EAPs) at high hazard potential dams is a key issue to reduce loss of life and property damage from dam failure. Dam risk mitigation is achieved by increasing dam safety, reducing potential consequences of dam-break floods and improving the preparedness of dam owners and operators, dam safety managers, emergency officials and the people at risk in the downstream valley.

This one-day course is designed to provide a comprehensive understanding of the most important aspects of dam safety evaluation and failure, dam-break flood risk assessment and emergency planning. It is developed by geotechnical, structural and hydraulic experts and comprises **four modules**: i) risk-based dam safety evaluation; ii) risk mitigation and emergency preparedness planning; iii) detection and classification of anomalies and causes of dam failure and iv) dam-break flood risk assessment.

The purpose of the **first module** is to provide an overview on risk-based dam evaluation. It begins with the presentation of the lessons learned from case histories and is followed by the description of current methods and tools available for estimating the likelihood of dam failure, including fault tree construction and evaluation and Failure Mode and Effects Analysis (FMEA) method. This module ends with the presentation of methodologies to estimate consequences of dam failure, analyzing scenarios to determine dam failures and assessing potential consequences, including economic, social, institutional and environmental damages.





In the **second module**, special importance is given to the methods used to estimate the potential for loss of life resulting from dam failure. The course also emphasizes, in this module, the importance of an Emergency Action Plan (EAP), defines its components, and provides guidance on developing and implementing the EAP.

The **third module** concerns emergency detection, evaluation and classification. Early detection and evaluation of the situation or triggering event that initiate an emergency action are essential. The course emphasizes the establishment of procedures for reliable and timely classification based in safety dam inspections, behavior analysis and remedial actions for dam safety for both, embankments and concrete dams

The **fourth module** is dedicated to dam-break modeling using a simplified methodology and using the unsteady state flow HEC-RAS model and GEO-RAS interface. These methodologies include outflow peak or hydrograph flow computing as well as flood routing in the downstream valley. Special emphasis will be given to tools and techniques for flood-prone areas delineation and characterization.

PROGRAM COURSE

9:00 - 11:00 Risk-based dam safety evaluation

Historical dam failures
João Marcelino

Assessment of probabilities: failure modes and event trees
Laura Caldeira

Assessment of consequences of failure
Teresa Viseu

11:00 - 11:30 Coffee Break

11:30 - 13:00 Risk Mitigation and emergency preparedness planning

Estimating dam failure loss of life
David Bowles

Emergency Action Plans for dams
Teresa Viseu

13:00 - 14:00 Lunch

14:00 - 15:30 Detection and classification of anomalies and causes of dam failure

Concrete dams
Luisa Braga

Embankments dams
João Marcelino

15:30 - 16:00 Coffee Break

16:00 - 18:00 Dam-break flood risk assessment

Dam-break flood modeling using HecRas and Geo-Ras
João Fernandes

Simplified dam-break flood modeling
José Melo

Dam-break flood-prone areas delineation and characterization
M. Oliveira / T. Martins