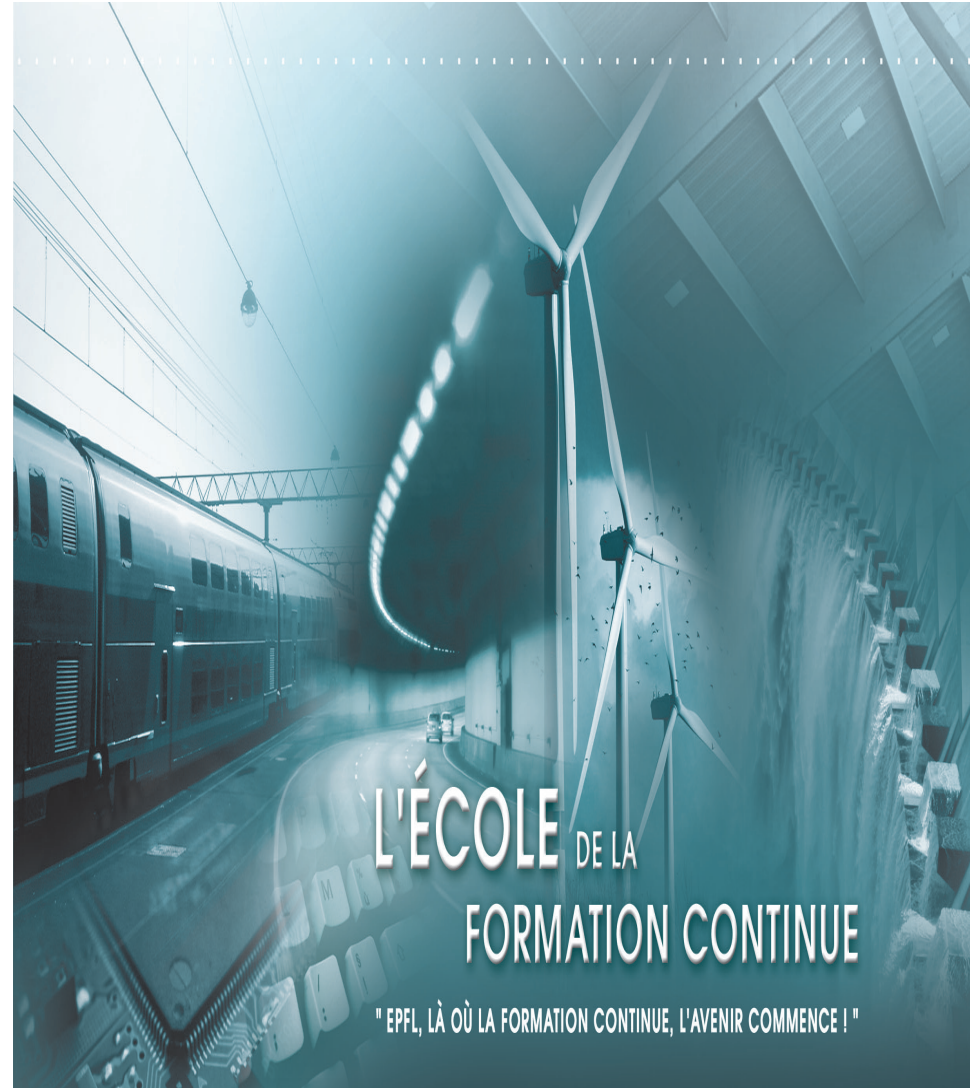
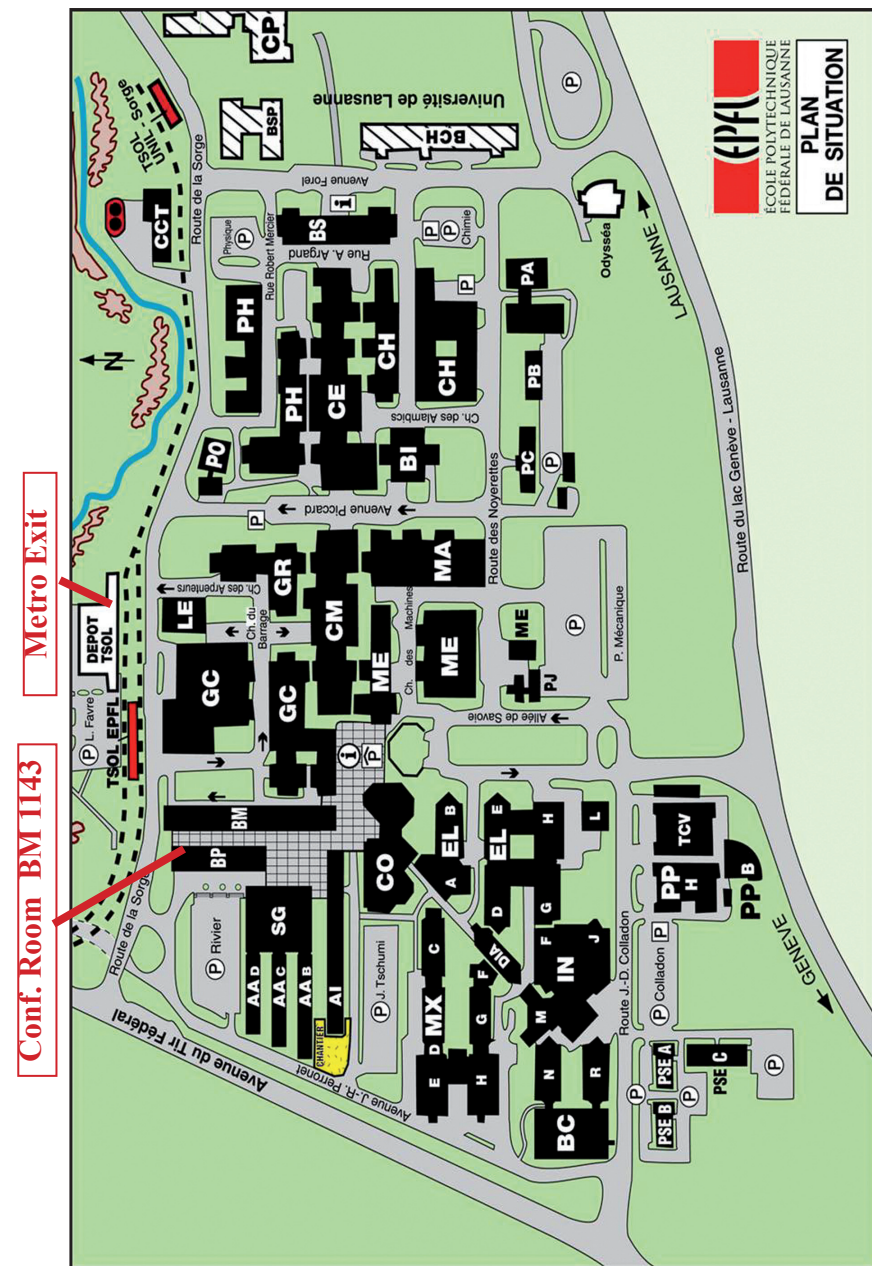


CAMPUS MAP



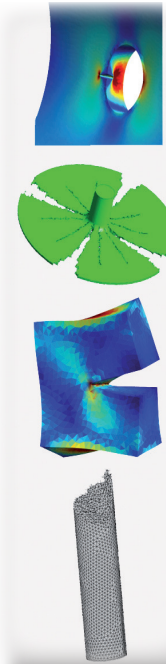
EPFL - AA - EFC
 PPH 251
 Station 13
 CH - 1015 Lausanne

Phone : +41 21 693 00 43
 Email : efc@epfl.ch
 Fax : +41 21 693 00 40
<http://continuing-education.epfl.ch>

A new approach for numerical analysis in mechanics

Extended finite element and meshfree methods: state-of-the-art and industrial applications

EPFL, Lausanne - July 3 to 6, 2007
 Room : BM 1143



To promote a new method of numerical analysis in mechanics for executives and research staff. Students will have an in-depth understanding of the XFEM and be exposed to state-of-the-art research in this area. An introduction to meshfree methods will be provided, and such methods compared with extended finite elements, with a specific emphasis on fracture mechanics.

Jointly organised by :
 EPFL's School of Continuing Education (SCE),
 Department of Civil Engineering - University of Glasgow



DATE AND PLACE

July 3 to 6, 2007

It will be held on the EPFL campus, 1015 Lausanne

Conference room : **BM 1143.**

TARGET AUDIENCE

This course will be of interest mainly to those in aeronautics, automotive industry, transport, mechanical and nuclear industries. A background in engineering or applied sciences and some previous exposure to finite element methods are necessary for understanding the material covered in this course.

ADMISSION REQUIREMENTS

A background in engineering or applied sciences and some previous exposure to finite element methods are necessary for understanding the material covered in this course

FEES (include coffee breaks and lunches)

Industry **CHF 1'500.-**

Academia **CHF 800.-**

Travel and accomodation are reserved and paid by participants.

REGISTRATION AND PAIEMENT

Application deadline is : **June 8, 2007**

Registration and payment are requested to done via our webpage :

<http://continuing-education.epfl.ch/xfem>

PROGRAM

- ✓ Introduction
- ✓ Level-set concept
- ✓ Enrichment techniques based on a Partition of Unity
- ✓ Specific numerical approaches
- ✓ Crack Propagation
- ✓ Meshfree methods and enrichment
- ✓ C++ object-oriented implementation of X-FEM : OpenXFEM++
- ✓ Presentation of different industrial applications

PRACTICAL SESSION

Students will implement by themselves the method in Matlab or Diffpack (InuTECH).

<http://www.inutech.de/english/index.htm>

For a whole day, under the close supervision of the professors, the students will have a chance to implement XFEM or/and the element-free Galerkin method on their own into a specially taylored programming interface (MATLAB and C++ --OpenXFEM++). This will provide them with a unique insight into the difficulties associated with programming these methods.

ROUND TABLE

A round table will allow participants to exchange ideas and isolate potential collaboration areas.

A test can be taken by those participants who wish to credit the course towards study at their home university. The test will be oral, and will take place either Friday afternoon, Saturday morning or during the following week, depending on the number of participants who wish to take the test and their location.

SPEAKERS

Dr. Stephane Bordas

Assistant Professor
University of Glasgow
extended.fem@googlemail.com



Dr. Antoine Legay

Assistant Professor
CNAM, Paris
antoine.legay@cnam.fr



Dr. Anthony Gravouil

Assistant Professor
INSA Lyon
anthony.gravouil@insa-lyon.fr



CONTACT AND INFORMATION

EPFL's School of Continuing Education

Phone : +41 21 693 00 63

Email : efc@epfl.ch