Aiming at a unique diversity of teaching and research training in the field of Earthquake Engineering, the organisation of the ROSE Programme is based on a relatively short permanence of scholars with extremely high qualification. Indeed, all lecturers at the Programme are internationally recognised experts in the field, coming from a number of distinguished institutions.

**Director**
G.M. Calvi

**Emeritus Director**
M.J.N. Priestley

**Teaching Body**
N. Abrahamson
S. Akkar
R. Archuleta
F. Auricchio
J. Berrill
K. Beyer
J.J. Bommer
D.M. Boore
R. Boroschek
F. Brezzi
A. Carr
C. Christopoulos
M. Cocco
M.P. Collins
J. Conte
H. Crowley
M. Cubrinovski
A. Dazio
A. Der Kiureghian
R. DesRoches
A. Elghazouli
A. Elshai
M. Erdik
E. Faccioli
M.N. Fardis
G.L. Fenves
A. Fillatruilt
P. Franchin
P. Gamba
M.C. Griffith
P. Gullan
R. Herrmann
T.J.R. Hughes
H. Igel
E. Kausel
E. Kazazianian
K. Kawashima
M.J. Kowalsky
S. Kramer
C.G. Lai
R. Leon
C. Lovadina
R. Madariaga
G. Magenes
E. Miranda
G. Monti
F. Naeim
M. Nakashima
S. Nielsen
S. Otani
M. Pagani
S. Pampanin
R. Paolucci
A.S. Papageorgiou
A. Pavesi
A. Pecker
M. Pender
J. Pettinga
R. Pinho
P.E. Pinto
C. Prato
J.H. Prevost
G. Rassati
E. Rathje
A. Reali
J. Restrepo
G. Rix
C. Scholz
D. Slejko
E. Spacone
J. Stastny
J.P. Stewart
H. Sucuoglu
T. Sullivan
J. Swanson
T. Triantafyllou
G. Valensise
K. Wilmanski

The IUSS-Pavia is the last step of a long lasting higher education process started on 825 when King Lotharius appointed Pavia, the ancient capital of the Lombard kingdom, as the site for higher education of his kingdom. This process went through the foundation in 1361 by Emperor Charles IV of the Studium Generale later on named University of Pavia. The first Colleges for university students were established in the 15th and 16th centuries. They are now 15 offering, to the almost 2.000 students, a unique opportunity of study and cultural enrichment in a multidisciplinary and multicultural environment. Through centuries the University of Pavia became one of the leading institutions in Europe.

IUSS fulfils, since 1997, an advanced teaching and research model successfully implemented by other prestigious institutions in Italy, like the Scuola Normale Superiore and the Scuola Sant’Anna in Pisa. Due to the completeness of its education and training fields, which allows a strong interdisciplinary approach, the mission of IUSS is that of contributing to the growth of a small number of selected students by offering them, at any step of their higher education, qualified programs enhancing their capabilities and knowledge. The Institute is also committed to scientific progress by preparing young researchers and developing scientific research programs.

**UME School**
C/o EUCENTRE
Via Ferrata, 1 - 27100, Pavia - Italy
Tel. (+39) 0382.5169852 - Fax (+39) 0382. 529131
Email: secretariat@umeschool.it - Website: www.umeschool.it

The European Commission has approved and financed within the Erasmus Mundus II the Masters in Earthquake Engineering and Engineering Seismology (MEEES), coordinated by the UME School and featuring also the participation of the University of Grenoble Joseph Fourier (France), the University of Patras (Greece) and the Middle East Technical University (Turkey), which aims to enhance quality in European higher education and to promote intercultural understanding through cooperation with third countries, a number of scholarships are available for both non-European as well as European students. Interested applicants are invited to visit the MEEES website (www.meees.org) for detailed information and instructions on financial conditions and application procedures.
The postgraduate school in Understanding and Managing Extremes (UME) is a new exciting development of the IUSS Pavia. (Institute for Advanced Study of Pavia, www.iusspavia.it), a higher education institution in Italy that offers international advanced postgraduate programmes (Masters and Doctorate). Innovative, internationally planned, open minded, grown on the traditionally fertile soil of the University of Pavia, and based on a system of Colleges unique in Italy, the IUSS prepares brilliant individuals to take on the most challenging and demanding public and private posts in contemporary Italy, Europe, the Mediterranean area and the rest of the world.

In this framework, the UME School offers graduate programmes geared towards the evaluation of uncertainties, risk mitigation and emergency management. The key objective is to provide a system within which Masters and Doctoral candidates can study, understand and deal with extreme events. The UME programmes currently focus on three main areas:

- Disaster risk assessment, focusing mainly on natural hazards such as earthquakes, hurricanes, fires, landslides and floods (with possible extensions to the topics of climatology, desertification, human-made and technological risks etc.).
- Extreme situation management, which includes topics of statistics and probability, law, economics, resource management, finance, insurance, sociology, ethics, psychology and medicine.
- Engineering for risk mitigation, which includes topics on engineering to increase the capacity of buildings and infrastructure to withstand the demands from extreme events.

At the UME School each course is intensively taught in a period of one to four weeks, during which the respective lecturer is able to fully dedicate his/her time and efforts exclusively to the scholastic activities at the school, thus ensuring teaching and research training at the highest possible levels of quality. All of the above endows a truly unique character to the UME School, be it for its fully international nature or for its innovative organisation in education and research training in the fields of evaluation of uncertainties, risk mitigation and emergency management.

Currently the UME School runs Masters and Doctoral Programmes in Earthquake Engineering and Engineering Seismology (ROSE) and Risk and Emergency Management (REN).

The ROSE Programme (formerly ROSE School) provides higher-level education in the field of earthquake engineering, offering a number of courses covering applied mechanics, structural engineering, earthquake engineering, engineering seismology and soil dynamics, with emphasis on both theoretical background and design considerations.

In addition to the PhD Degree, the programme offers Masters Degrees in earthquake engineering and engineering seismology with (www.meees.org, see the Erasmus Mundus paragraph on leaflet) and without (www.roseschool.it) mobility, the latter being jointly awarded by the IUSS and the University of Pavia.

The UME School is located at the European Centre for Training and Research in Earthquake Engineering (EUCENTRE, www.eucentre.it), a landmark structure dating back to the second half of the seventeenth century, purposefully refurbished to serve as an international hosting facility for postgraduate students and visiting scholars working in the field of natural risk mitigation. It is located in the centre of Pavia, in Via Luigi Porta 10.

**PROGRAMME OF THE SEMINAR**

Thursday, 17th May

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>13.00 – 14.30</td>
<td>Welcome lunch and registration</td>
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<tr>
<td>14.30 – 16.00</td>
<td>Session 1 - Chairman: A. Dazio</td>
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<tr>
<td></td>
<td>Design of mixed MRF systems allowing for the influence of hysteretic behaviour on seismic response</td>
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<td></td>
<td>T. Malev*, T. Sullivan, S. Pamparîn</td>
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<td></td>
<td>Evaluation of the shear strength capacity of precast prestressed hollow core floor slabs</td>
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<td>D. Siciliano*, D. Calvi, P. Nascimbène</td>
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<td>16.00 – 16.30</td>
<td>Coffee break</td>
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<tr>
<td>16.30 – 18.00</td>
<td>Session 2 - Chairman: T. Sullivan</td>
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<tr>
<td></td>
<td>Seismic behaviour assessment of timber structures: numerical modeling and experimental results</td>
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<td></td>
<td>V. Forti, S. Palao, A. Pavese</td>
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<tr>
<td>19.30 – 23.30</td>
<td>ROSE Seminar Dinner</td>
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Friday, 18th May

<table>
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<th>Time</th>
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<tr>
<td>09.00 – 11.00</td>
<td>Session 3 - Chairman: M. Magenes</td>
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<tr>
<td></td>
<td>Accounting for progressive damage in SP-BELA method</td>
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<td>P.C. Miglietta*, B. Barç, P. Casorà, P. Scavino</td>
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<td>Physical and numerical modeling in slope stabilization with large diameter shafts</td>
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<td>A.G. Osacolo*, G.O. Lai</td>
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<td>Some critical issues on the seismic modelling and analysis of irregular RC buildings</td>
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<td>R. Souss*, R. Petru, R. Nascimbène</td>
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<td></td>
<td>Developing robust Displacement-Based Design and assessment procedures for simplified Performance-Based Earthquake Engineering</td>
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<td></td>
<td>D. Welsh*, T. Sullivan, G.M. Calvi</td>
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<tr>
<td>11.00 – 11.30</td>
<td>Coffee Break</td>
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<tr>
<td>11.30 – 13.00</td>
<td>Session 4 - Chairman: A. Pavese</td>
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<td>Identification of displacement-based damage levels from nonlinear dynamic analyses of masonry buildings</td>
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<td></td>
<td>M. Masoodi*, M. Rota, A. Penna, M. Magenes</td>
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<td>Experimental seismic response of reinforced stone masonry buildings</td>
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<td>I. Seradi*, G. Magenes, A. Penna, M. Rota, A. Galasch</td>
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<td>Force-deformation relationships for masonry spandrels with arches</td>
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<td>S. Mangaliftski*, K. Bayer</td>
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<td>13.00 – 14.30</td>
<td>Lunch break</td>
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<tr>
<td>14.30 – 16.30</td>
<td>Session 5 - Chairman: G.M. Calvi</td>
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<td>Keynote lecture: Earthquake design of foundations: recent developments from research to practice</td>
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<td>Alan Pecker</td>
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<td>Overview of 2011-2012 Eucentre Activities</td>
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<td>ROSE/MEEES Graduation Ceremony</td>
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<td>Award of the ROSE Prize 2012</td>
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PhD Student, PhD Alumni, MSc Student