# MSc in “Civil Engineering for Mitigation of Risk from Natural Hazards”

**Courses offered (general structure) 2022-2023**

## Reduction Of Seismic Risk

<table>
<thead>
<tr>
<th></th>
<th>First semester</th>
<th>Second semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Month 1</strong></td>
<td><strong>Month 2</strong></td>
<td><strong>Month 3</strong></td>
</tr>
<tr>
<td><strong>Month 4</strong></td>
<td><strong>Month 5</strong></td>
<td><strong>Month 1</strong></td>
</tr>
<tr>
<td><strong>Month 2</strong></td>
<td><strong>Month 3</strong></td>
<td><strong>Month 4</strong></td>
</tr>
<tr>
<td><strong>Month 5</strong></td>
<td><strong>Month 5</strong></td>
<td><strong>Month 5</strong></td>
</tr>
</tbody>
</table>

### 1st year

**Series**
- Dynamics of Structures (H. Sucuoglu-METU Ankara **)
- Reinforced Concrete Structures (P. Calvi, U. of Washington, ** – G. Guerrini)
- Applied Mathematics (M. Martinelli – IMATI – CNR**)
- Computation al Mechanics (A. Reali)
- Probability and Statistics for Eng Appl (P. Bazzurro + P. Venini)
- Seismic Hazard and Applied Seismology (V. Poggi – OGS Trieste**)
- Foundation engineering and Earth Retaining Structures (V. Sheshov - IEEES Skopje)**
- Nonlinear Response Analysis (J. Almeida U. Louvain & A. Correia LNEC Lisbon **)
- Fundamentals of Seismic Design (R. Monteiro + G. Gabbianelli)

### 2nd year

**Series**
- Seismic Risk (Bazzurro + D. Vamvatsikos NTU Athens **)
- 1 choice
- Bridge structures (G. M. Calvi)
- Masonry structures (G. Magenes, F. Graziotti)
- 1 choice
- Thesis

### Parallel
- Geotechnical Earthquake Engineering (C. G. Lai)

### Choices

- **Steel Structures** (R. Nascimbene)
- **Seismic Isolation and Dissipation** (A. Filiatrault)
- **Risk Emergency Management and Legislation** (Monti at al.)
- **Geomatics and GIS –b** (A. Taramelli)
- **Mathematics and statistics**
- **Solid and structural mechanics**
- **Structural/geotechnical design, assessment and retrofit**
- **Hazard and risk analysis**
- **Complementary**
# MSc in “Civil Engineering for Mitigation of Risk from Natural Hazards”

**Courses offered (general structure) 2022-2023**

<table>
<thead>
<tr>
<th>Hydrogeological Risk Assessment &amp; Mitigation</th>
<th>First semester</th>
<th>Second semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month 1</td>
<td>Month 2</td>
<td>Month 3</td>
</tr>
<tr>
<td></td>
<td>Parallel</td>
<td><strong>Geomatics and GIS –a</strong> (A.Taramelli)</td>
</tr>
<tr>
<td>2nd year</td>
<td>Series</td>
<td>Hydrological Risks (M.Martina)</td>
</tr>
<tr>
<td></td>
<td>Parallel</td>
<td></td>
</tr>
<tr>
<td><strong>Choices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Mathematics and statistics
- Fluid and continuum mechanics
- Hazard and exposure; definition and modeling
- Risk analysis
- Measures for risk mitigation