



## DYNAMICS OF STRUCTURES

<b>Enrollment year</b>	2021/2022
<b>Academic year</b>	2021/2022
<b>Regulations</b>	DM270
<b>Academic discipline</b>	ICAR/08 (CONSTRUCTION SCIENCE)
<b>Department</b>	DEPARTMENT OF CIVIL ENGINEERING AND ARCHITECTURE
<b>Course</b>	CIVIL ENGINEERING FOR MITIGATION OF RISK FROM NATURAL HAZARDS
<b>Curriculum</b>	Reduction of seismic risk
<b>Year of study</b>	1°
<b>Period</b>	1st semester (20/09/2021 - 13/10/2021)
<b>ECTS</b>	6
<b>Lesson hours</b>	51 lesson hours
<b>Language</b>	English
<b>Activity type</b>	WRITTEN AND ORAL TEST
<b>Teacher</b>	SUCUOGLU HALUK (titolare) - 6 ECTS
<b>Prerequisites</b>	Calculus, linear algebra, matrix structural analysis
<b>Learning outcomes</b>	To learn principles of dynamics of structures using finite elements and introduction to earthquake engineering
<b>Course contents</b>	<ul style="list-style-type: none"><li>-Equation of motion for SDOF systems, its solution</li><li>-Free vibration response, viscous damping</li><li>-Response to harmonic excitation</li><li>-Response to general excitation</li><li>-Numerical evaluation of dynamic response</li><li>-Generalised SDOF systems</li><li>-Equations of motion for MDOF systems</li><li>-Free vibration analysis</li><li>-Modal expansion, damping in structures, damping matrix</li><li>-Modal response analysis of undamped systems</li></ul>

	<ul style="list-style-type: none"> <li>-Modal response analysis of damped systems</li> <li>-Torsional response of 3D systems</li> </ul>
<b>Teaching methods</b>	<ul style="list-style-type: none"> <li>a)Lecture: 3 hours per day from Tuesday to Thursday.</li> <li>b)Tutorial: 4 hours per week.</li> </ul>
<b>Reccomended or required readings</b>	---
<b>Assessment methods</b>	<ul style="list-style-type: none"> <li>a) homework</li> <li>b) final exam</li> </ul>
<b>Further information</b>	---
<b>Sustainable development goals - Agenda 2030</b>	<a href="#">\$ibl_legenda_sviluppo_sostenibile</a>