ERASMUS+
EU programme for education, training, youth and sport

Incoming student mobility

Name of UNIOS University Unit: Faculty of Civil Engineering and Architecture Osijek

COURSES OFFERED IN FOREIGN LANGUAGE
FOR ERASMUS+ INDIVIDUAL INCOMING STUDENTS

Department or Chair within the UNIOS Unit	Department of Technical Mechanics

Study program	Graduate university studies

Study level (bachelor/master)	Master level

Course title	STRUCTURAL DYNAMICS
Course code (ISVU)	294924
Language of instruction	English
Course content	The single-degree-of-freedom system. Response of dynamic loads by superposition in time and frequency domain. Time domain integration. Continuous systems (partial differential equations), generalised single-degree-of-freedom systems, dynamic response by modal superposition. Damping mechanisms and models. The equation of motion in a matrix format. Numeric solution to the problem of free oscillations. Direct solution of the equation of motion in time and frequency domain. Response calculations for relevant load cases (e.g. wind and earthquake).
Prerequisites for enrolment (if any)	Mechanics, Statics, Strength of Materials
Learning outcomes	At the conclusion of this course, the students will have an understanding of: fundamental theory of dynamic equation of motion fundamental analysis methods for dynamic systems dynamic properties and behaviour of civil structures modelling approach of dynamic response in civil engineering applications. At the conclusion of this course, the students will be able to:

	apply knowledge of mathematics, science, and engineering by developing the equations of motion for vibratory systems and solving for the free and forced response; create simple computer models for engineering structures using knowledge of structural dynamics; interpret dynamic analysis results for design, analysis and research purposes; apply structural dynamics theory to earthquake analysis, response, and design of structures.
Basic Literature	***Chopra, A.K****.: Dynamics of Structures, Theory and Applications to Earthquake Engineering, Prentice Hall, New Jersey, USA, 2001.* ***Čaušević, M****.: Dinamika konstrukcija (Potresno inženjerstvo, Aerodinamika, Konstrukcijske norme), Golden marketing, Tehnička knjiga, Zagreb, 2010.*
Additional Literature	***Tedesco, J.W; McDougal, W.G; Ross, C.A****.: Structural Dynamics, Theory and Applications, Addison-Wesley Longman, California, USA, 1999.* ***Paz, M****.: Structural Dynamics, Theory and Computation, Van Nostrand Reinhold, New York, USA, 1980.*
Form of teaching	Lectures and model illustrations. Obligatory numerical and computer exercises.
Form of assessment	Homework and Computer Assignments 30% Midterm (30 %) and Final (40 %) Exams
Number of ECTS	5,0
Class hours per week	4
Period of realization (summer/winter semester)	winter semester
Teacher(s) + Email address	iguljas@gfos.hr
Assistant(s) + Email address(es)	-