Course Unit Descriptor

Study Programme: Civil Engineering

Course Unit Title: Plates and shells

Course Unit Code: GG36HP

Name of Lecturer(s): Radujković Aleksandra

Type and Level of Studies: bachelor

Course Status (compulsory/elective): elective

Semester (winter/ summer): summer

Language of instruction: english

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated: 5

Prerequisites: none

Course Aims:.

Acquiring knowledge necessary for engineering understanding of stress problems related to plates and shells.

Learning Outcomes:
Ability to understand engineering problems of plates and shells. Ability to numerically solve and model some problems on plates and shells.

Syllabus.
Basic notions in the theory of plates and shells. Bending of thin rectangular plates.Bending of thin circular plates. Plates on elastic fundations. Analysis of thin plates by finite difference method.Modelling of thin plates using the finite element method. In plane loaded plates. Plane stress. Plane strain. Plane stress theory in polar coordinates. Modelling in plane loaded plates using the finite element method. The theory of shells.The membrane theory of shells of revolution. Cylindrical, spherical and conical shells in axisymmetrically loaded for membrane state.The bending theory of axisymmetrically loaded circular cylindrical shells. The bending theory ofaxisymmetrically loadedspherical shells. Modelling shells of revolution using the finite element method.

Required Reading:
Relevant literature in English, tbd

Weekly Contact Hours:2	**Lectures: 3**	**Practical work: 1**

Teaching Methods:
Lectures, auditory, computing and computer exercises, consultations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Attendance			
Computer exercises			
Tests (4x)			