Course Unit Descriptor

Study Programme: Civil Engineering

Course Unit Title: Theory of Plates and Shells

Course Unit Code: GG36

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 stress and strain analysis of thin plates and shells due to the action of static load.

Learning Outcomes:
Ability to understand engineering problems related with plates and shells. Ability to obtain analytical and numerical solutions to some problems regarding thin plates and shells

Syllabus.
Basic notions in the theory of plates and shells. Thin plates bending theory. Navier`s solution. M. Levy`s solution. The bending theory of thin circular plates. Modelling of thin plates using the finite element method. In plane loaded plates. Plane stress. Wall girders. 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 of shells of revolution. The bending theory of axisymmetrically loaded circular cylindrical shells. The bending theory of axisymmetrically loaded spherical 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. Continuous monitoring of the level of knowledge through homework assignments.

Knowledge Assessment (maximum of 100 points):

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