

LABORATORY ASSIGNMENT

Student's name

- 1) Formulate static and free vibration plane strain problems (specify: a domain, equations, boundary conditions, material properties).
- 2) Using the PDE Toolbox solve the problems defined above for a few various discretizations.
- 3) Create graphs of convergence for: displacement, stress and basic eigen frequency norms.
- 4) For one of the PDE Toolbox discretizations repeat the calculations using CALFEM procedures. Compare the results in the table.

Input data:

density: $\rho = \dots\dots\dots \text{ kg/m}^3$

Young modulus $E = \dots\dots\dots \text{ Pa}$

Poisson ratio $\nu = \dots\dots\dots$

RESULTS:

ANALYSIS TYPE	Quantity	PDETOOL <i>NDOF</i> =	CALFEM
static response	max equivalent stress σ_{red}		
	$\ u\ _{\infty} = \sup \sqrt{u_x^2 + u_y^2}$		
eigen problem	1 st angular frequency ω_1		
	2 nd angular frequency ω_2		