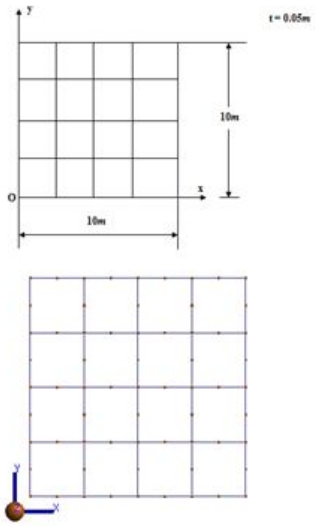
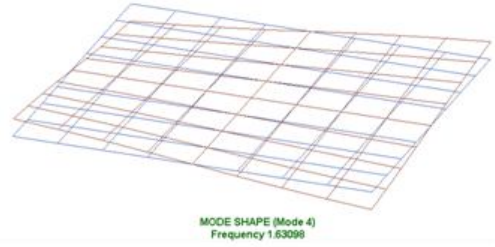
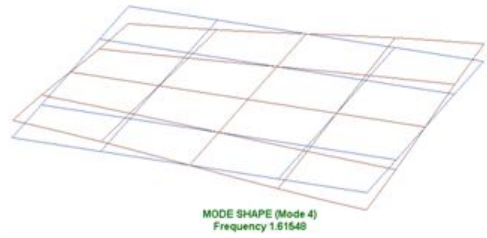
Free vibration analysis of free thin square plate







Boundary condition : $U_x = U_y = R_z = 0$ all nodes

Material property : E = 200 *GPa*, ν = 0.3, Specific gravity = 8

Element type : Thin shell element, thickness = 0.05 *m*

Mesh type : 4 Node: 8 x 8

8 Node: 4 x 4

Finite element statistics :

Number of elements	Number of nodes	Degrees of freedom
16	65	195

Mode	4 Node			8 Node		
	NAFEMS	FEAST^{SMT}	NASTRAN®	NAFEMS	FEAST^{SMT}	NASTRAN®
4	1.63	1.63	1.58	1.53	1.61	1.58
5	2.40	2.40	2.24	2.36	2.36	2.23
6	3.00	3.00	2.80	2.86	2.93	2.80
7	4.25	4.27	3.93	4.12	4.15	3.94
8	4.25	4.27	3.93	4.12	4.15	3.94
9	7.86	7.92	6.82	7.36	7.52	6.81