Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student number\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Assignment 4 (4p)**

A rectangular plate of size  and thickness  is loaded by  in the transverse direction. The plate is simply supported on edges where  and free on the edges where  Assuming that the material parameters *E*, ν are constants, find the amplitude  of transverse displacement  so that the bi-harmonic equation for the transverse displacement is satisfied. Start with the invariant formof the bi-harmonic equation .

*x*

*b*

*H*

*y*

*L*

**Answer**  