



**Thesis Title** Existence of Solutions for Nonlinear Beam Equation  
with Two Parameters

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### ABSTRACT

In this research, we are concerned with the existence of solutions for nonlinear beam equation with two parameters, fourth order boundary value problem, in the form

$$u^{(4)}(x) - au''(x) + bu(x) = f(x, u(x), u''(x)), \quad x \in (0, 1)$$

$$u(0) = u(1) = u''(0) = u''(1) = 0.$$

where  $f : [0, 1] \times \mathbf{R} \times \mathbf{R} \rightarrow \mathbf{R}$  is continuous,  $a$  and  $b$  satisfy non-resonance condition.

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