11. (Optional) A beam bending equation for both transverse and axial loading
An equation for beam buckling due to compression

Introduction to Buckling

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We can extend the model for beam bending to a model of a horizontal beam that has a distributed load $q_n(x)$, a deflection of $v(x)$, and an axial load F via the equation

$$EI \frac{d^4}{dx^4} v\left(x\right) + F \frac{d^2}{dx^2} v\left(x\right) = q_y\left(x\right).$$

When the axial loading is zero, this reduces to the beam bending equation we derived previously.

11. (Optional) A beam bending equation for both transverse and axial loading

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? **An equation for beam buckling:** Why moment due to reaction force R is not considered in the video?	4
💬 **A literary reference** This sounds something like the way Sampson killed himself and many Philistines by pushing out the pillars of the temple. 👤 Community TA	1
? **Coefficient of fourth derivative term** I just wonder if the coefficient is not 2EI instead of EI.	1