general relationship is given by the

To get a hint to the general formula, start with an isotropic material whose elastic moduli are all the same in each direction. To further simplify, focus on the $$x$$-face of the material and

Application of a tensile stress $$T\_{xx}$$ results in strain along the direction of the stress

\[ E \epsilon\_{xx} = T\_{xx} \; . \]

Application of tensile str

* Better variation of Arfken:
  + Deformation: - my improvement - measures the extent of deformation (Lie derivative?) with
  + Focus on two points:
    - Before deformation:
    - After deformation:
  + Measure the distance between the points
    - Before deformation:
    - After deformation:
* <http://web.mit.edu/16.20/homepage/2_Strain/Strain_files/module_2_with_solutions.pdf>
  + Find the length difference
    - Define the Green-Lagrange strain tensor:
  + Now lose the idea of by assuming that
    - Can usually drop the non-linear term

This synthesis results in the generalize Hooke’s law

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