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## EE C247B - ME C218 Introduction to MEMS Design Spring 2018

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Lecture Module 8: Microstructural Elements

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## Outline

- Reading: Senturia, Chpt. 9
- Lecture Topics:
  - ↪ Bending of beams
  - ↪ Cantilever beam under small deflections
  - ↪ Combining cantilevers in series and parallel
  - ↪ Folded suspensions
  - ↪ Design implications of residual stress and stress gradients

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## Bending of Beams

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## Beams: The Springs of Most MEMS

- Springs and suspensions very common in MEMS
  - ↪ Coils are popular in the macro-world; but not easy to make in the micro-world
  - ↪ Beams: simpler to fabricate and analyze; become "stronger" on the micro-scale → use beams for MEMS

Comb-Driven Folded Beam Actuator

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