

For updated version, please click on  
<http://ocw.ump.edu.my>

# Mechanics of Materials

## Topic 6 – Analysis and Design of Beams for Bending

by

Dr Nanang Fatchurrohman  
Faculty of Manufacturing Engineering  
[fatchurrohman@ump.edu.my](mailto:fatchurrohman@ump.edu.my)



Mechanics of Materials: N. Fatchurrohman

The beams supporting the multiple overhead cranes system shown in this picture are subjected to transverse loads causing the beams to bend. The normal stresses resulting from such loadings will be determined in this chapter.



Source: [http://img.nauticexpo.com/images\\_ne/photo-g/30468-10116858.jpg](http://img.nauticexpo.com/images_ne/photo-g/30468-10116858.jpg)



Mechanics of Materials: N. Fatchurrohman

## Timber beams used in residential dwelling.



Source: [https://commons.wikimedia.org/wiki/File:Thai\\_House\\_Trat\\_Wooden\\_Beams.JPG](https://commons.wikimedia.org/wiki/File:Thai_House_Trat_Wooden_Beams.JPG)



Mechanics of Materials: N. Fatchurrohman



# Non-prismatic cantilever beams of bridge during construction.



Source: [https://commons.wikimedia.org/wiki/File:Gateway\\_Bridge\\_construction.JPG](https://commons.wikimedia.org/wiki/File:Gateway_Bridge_construction.JPG)



Mechanics of Materials: N. Fatchurrohman