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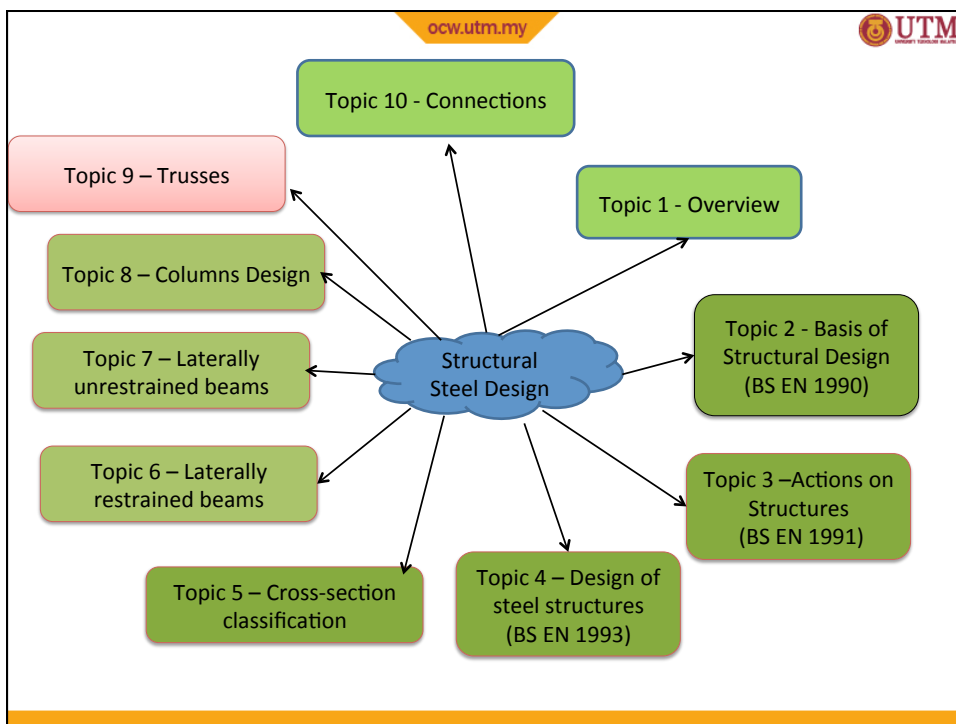
Structural Steel and Timber Design SAB3233

Topic 9 Trusses Design

Prof Dr Shahrin Mohammad

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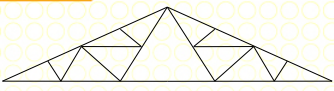

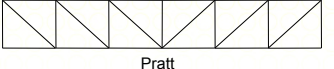


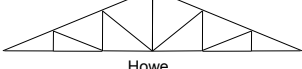
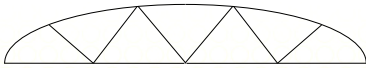
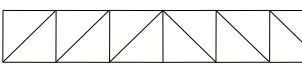
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|  <p>Pratt</p> |  <p>Belgium</p> |
|  <p>Pratt</p> |  <p>Warren</p> |
|  <p>Fink</p> |  <p>Howe</p> |
|  <p>Curved</p> |  <p>Howe</p> |

Examples of plane truss system

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Cold-formed steel sections Angle C-channel Joist CHS SHS

Members used in truss system

Concentrated loads Node Top chord (rafter) Sloped internal member Vertical internal member Bottom chord Overall span

Terminology in truss system

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    graph TD
      Start([Start]) --> Loading[Loading]
      Loading --> Analysis1[Analysis assuming all joints are pin-jointed and all loading on the nodes, out put will be]
      Analysis1 --> Analysis2[Analysis of the load bearing member such as rafter as a continuous beam supported at the nodes and loaded by the purlins.]
      Analysis2 --> Assessment1[Assessment of stresses due to eccentricity of the connections]
      Assessment1 --> Assessment2[Assessment of the effects of joint rigidity and deflection]
      Assessment2 --> End([End])
  
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Start

Loading

Analysis assuming all joints are pin-jointed and all loading on the nodes, out put will be

- 1 Tensile stress – normally occurs at bottom chord and sloped internal members
- 2 Compressive stress – occurs at top chord and the vertical internal members

Analysis of the load bearing member such as rafter as a continuous beam supported at the nodes and loaded by the purlins.

Assessment of stresses due to eccentricity of the connections

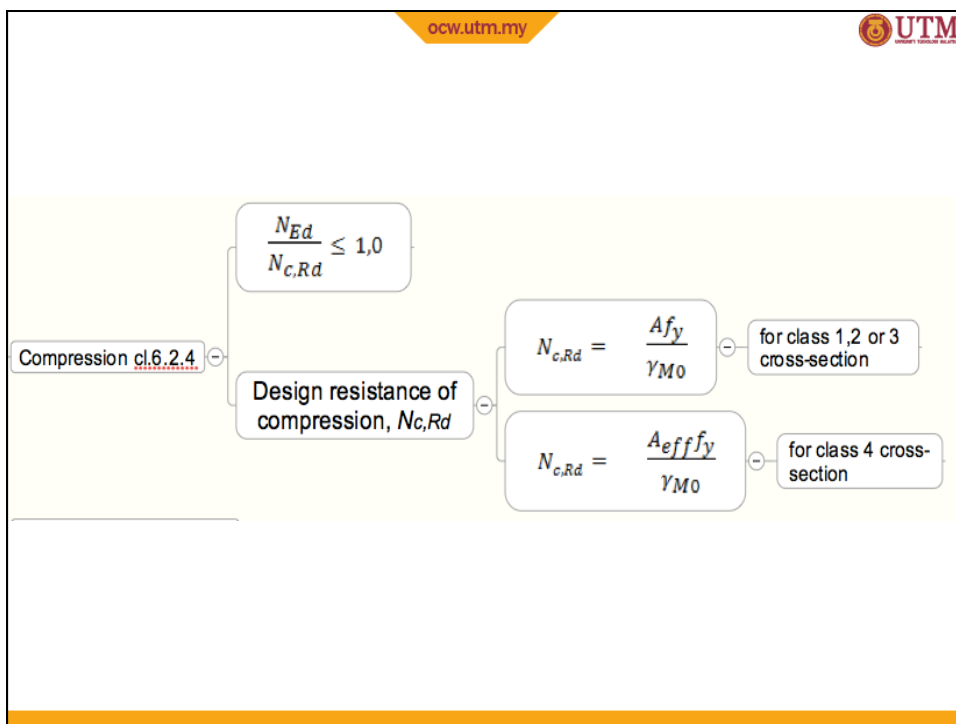
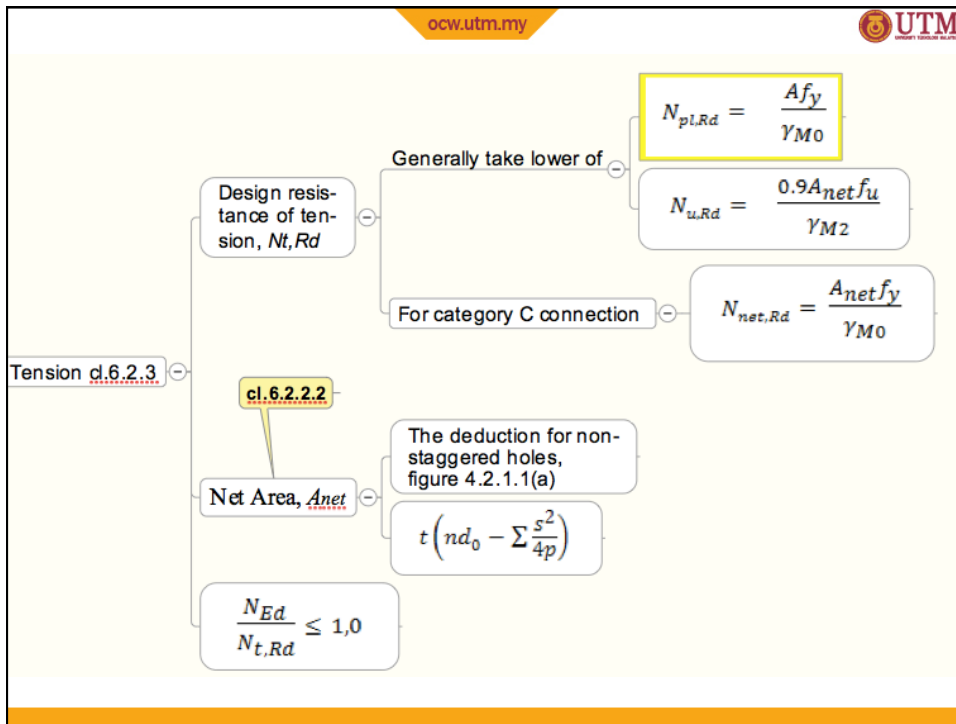
Assessment of the effects of joint rigidity and deflection

*Normally ignored

End

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Example 1 : Design of trusses

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This slide features a yellow background with a pattern of small white circles. At the top left is the UTM logo and name. To its right, the text 'OPENCOURSEWARE' is displayed. The main title 'Example 1 : Design of trusses' is centered in a light blue box. The bottom left contains the slogan 'Inspiring Creative and Innovative Minds', and the bottom right shows the website 'ocw.utm.my' and a Creative Commons license icon (CC BY NC SA).

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Thank You

This slide has a solid yellow background. At the top left, the website 'ocw.utm.my' is written. At the top right is the UTM logo and name. The text 'Thank You' is centered in a large, red, stylized font within a light pink rectangular box. The bottom of the slide is a solid orange bar.