
Week 3



TAM 210/211 Introduction of Statics

DISCUSSION SESSION



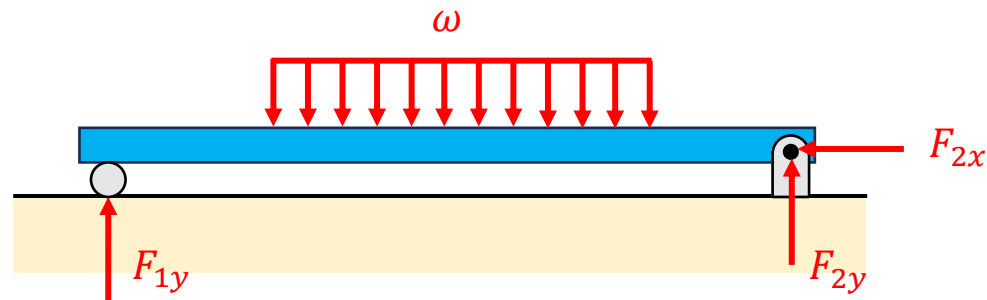
WEEK 3 – Equilibrium

- **Equilibrium**

- All external forces and torques are balanced
- Object is at rest (static equilibrium) or moving with constant velocity (dynamic equilibrium)
- $\sum_i^{all} \vec{F}_i = 0 \rightarrow$ equilibrium equation (EoE)
- $\sum_i^{all} \vec{F}_i = 0 \rightarrow \sum_i^{all} F_{i,x} = 0 \text{ \& } \sum_i^{all} F_{i,y} = 0$

- **Free body diagram (FBD)**

- Visualizes the forces, moments, and reactions

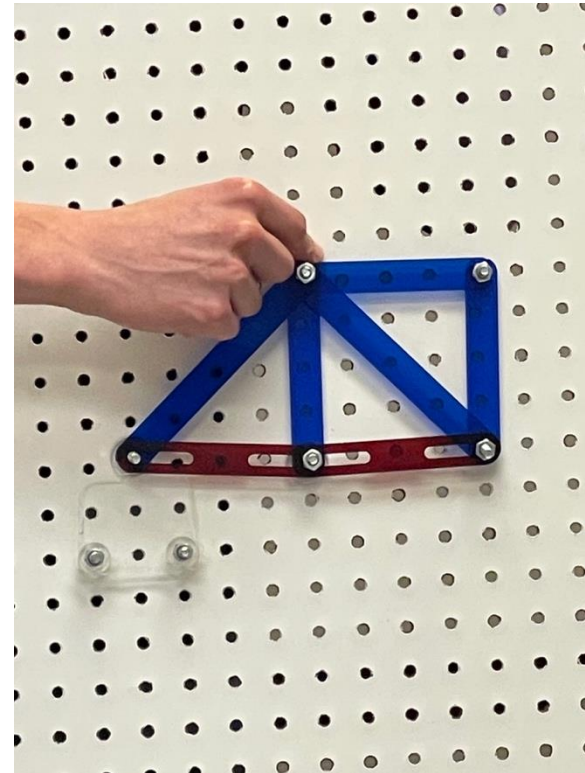


Share Your Thoughts

- **Discussion with a demo**
 - How can we develop this demo?
 - Let us know what's missing



Week 3
Spring demo

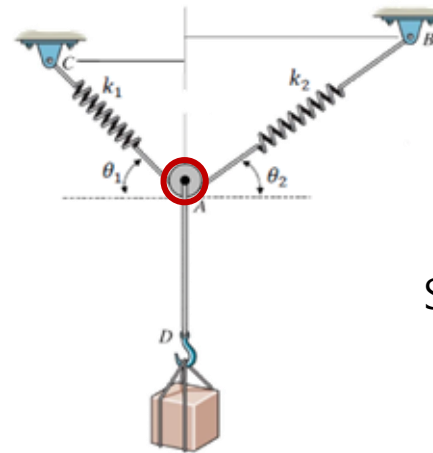
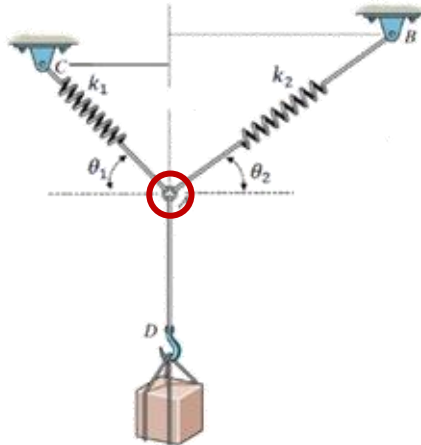


Week 8
Truss demo

WEEK 3 – Equilibrium

- **Additional instructions for Problem #3**

- Check the spring demo example at the front
- Distinguish between a pulley and a ring
- **Consider the differences between the ideal case and the real case**



Spot the difference!



WEEK 3 – Equilibrium

- Additional introductions for Problem #1