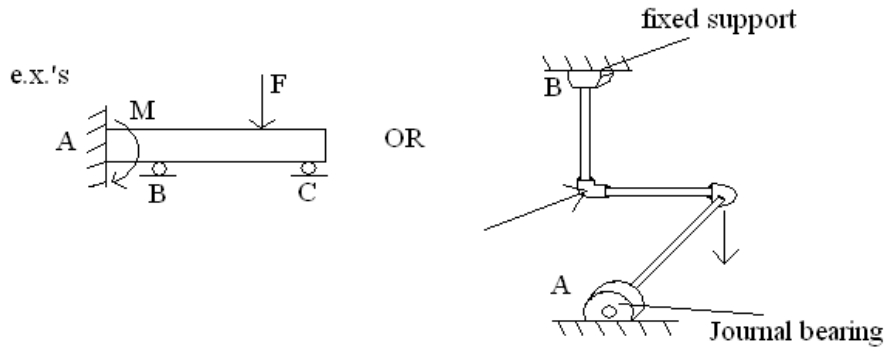## A note on redundancy

Redundant supports are extra supports that are not necessary to hold the body in equilibrium.

Redundancy is generally good, but it creates too many unknowns for our 3 (2D) equations or 6 (3D) equations of static equilibrium. Note how most of the examples throughout this chapter have used primarily pins or rollers, because multiple fixed supports $\Rightarrow$ redundancy.

The additional equations needed for redundant supports involve the physical properties of the body, which are studied in subjects dealing with the mechanics of deformation. The following chapters on Mechanics of Materials and Classical Structural Analysis deal with redundant systems. Redundant systems are commonly called "statically indeterminate" systems.

Hibbeler, R.C. Engineering Mechanics: Statics Tenth Edition. Pearson. Upper Saddle River, NJ 2004.
Johnson, Erik. Lecturer. Univ. of Southern California. CE205. Fall 2004.