## **Problem M25** (Materials and Structures)

In addition to chapters 4-7 of Ashby and Jones Engineering Materials, you may also find the chapters on polymers in Ashby and Jones, Engineering Materials 2, helpful (this is a green covered book, available in the Aero-Astro library).

a)	Define the term <i>polymer</i> and list three engineering polymers.
b)	Define a thermoplastic and a thermoset.
c)	Distinguish between a cross-linked and a non-cross-linked polymer.
d)	What is the glass transition temperature?
e)	Explain the change in moduli of polymers at the glass transition temperature.
f)	What is the range of temperature in which $T_G$ lies for most engineering polymers?
g)	How would you increase the modulus of a polymer?