

## MATRL 100A: Structure and Properties I, Assignment 1

### Chapter 1

1. Look at the wikipedia page for Material selection, that describes Ashby plots or Ashby diagrams. These are plots of one kind of material property against another, for example, the density of different kinds of materials on one axis, and their strengths on the other. Such diagrams enable material selection: For example, which material would be selected to make an aircraft wing, or a bridge.

Create an Ashby diagram of any two properties of elements that interest you. You could, for example, relate the electronegativity to the density of different elements. Using Excel or any similar program, plot at least 20 elements or compounds on your diagram. Comment on what you learn. We recommend that your selection be broad (don't choose only metals for example) so you can see general trends. What do you learn?