**Course Intro**

Slide 4

Visualization is suitable when there is a need to augment human capabilities rather than replace people with computational decision-making methods. The design space of possible vis idioms is huge, and includes the considerations of both how to create and how to interact with visual representations. Vis design is full of trade-offs, and most possibilities in the design space are ineffective for a particular task, so validating the effectiveness of a design is both necessary and difficult. Vis designers must take into account three very different kinds of resource limitations: those of computers, of humans, and of displays. Vis usage can be analyzed in terms of why the user needs it, what data is shown, and how the idiom is designed.

Slide 6

An attempt to synthesise current state of knowledge into something that can be actioned by the practising information visualiser.

Problems with 3D come from the inherently 2D nature of the way that data is presented – we infer 3D from visual cues.

2D graphics – don’t underestimate the value of lists and tables for presenting small quantities of data.

Visual comparison is easier and faster than mental retrieval

Resolution over immersion – pixels are precious!

This is Ben Shneiderman’s influential mantra. Note that it is predicated on being able to interrogate a graphic, and is thus inherently for dynamic computer-based visualisation (as opposed to Tufte who focuses on graphic display of information).

Latency of interaction has a large effect on our ability to carry out a task effectively.

Get it right in black and white – perhaps too strong, but it reminds us that the luminance (brightness) measure is the easiest for us to distinguish as a scale

The best designs should be beautiful as well as effective – but the second is the most important.