**Material search and design – At what cost?**

Overview – At what cost? – Material investigation and design proposal with specific reference to environmental impact.

**Material assigned – Shape memory polymers**

Your task is to investigate the material provided within the context of a design concept that you propose. Firstly, do an initial investigation of the material assigned. Then, design a simple object that utilises the unique material properties and manufacturing processes of the assigned material. Extra grades are awarded for new appropriate uses of the material.

Once the simple object has been designed, further material investigations are required. The assignment requires direct linking of your designed object and the material researched. Examine topics such as; the product lifecycle, how the material is formed, material properties and in particular, reference the environmental impact of that material. You are to present your findings in the form of a visual illustrated research report which will be presented in class. Text must be kept minimal and be used more as annotations rather than paragraphs of content. Diagrams, sketches, annotations and tables should form the bulk of the assignment report, this will include CesEdupack tables. Format your sketches into a neat presentation using PowerPoint.

Special notes:

Use the CES Edupack Material software as a start for your investigations.

*Marking criteria: 20% Overall*

**Depth of research – 2.5%** (For High Distinction – Comprehensive coverage of the material including lifecycle assessment.)

**Breadth of research – 2.5%** (For HD – Excellent range of sources referred to throughout. Academic and industry references used.)

**Concept proposal (Personal design using provided material) – 5%** (The concept proposal shows a new appropriate use of the material as well as a clearly explained way of manufacturing the concept, including clear diagrams that show the concept being manufactured.)

**Visual (illustrations and sketches used in presentation) – 10%** (A polished, professionally presented visual document/pres. With consistency in layout and graphics. Excellent quality original diagrams, and imagery used throughout.)