Criterion C

(i) Justifies the choice of appropriate materials and components for a prototype

* **Materials** are identified and selected considering the requirements of the prototype.
  + can be justified through cost, availability (supply) [properties](http://www.ruthtrumpold.id.au/destech/?page_id=64) (aesthetic, mechanical and Physical), environmental concerns, etc
  + use material selection charts
  + a variety of materials should be considered
  + finishing of materials should be considered
  + valid reasons (justification) for your choice need to be presented.
  + Provide rationale for why the materials were chosen compared with other options i.e. appropriateness.
* **Components** are identified and selected according to the requirements of the prototype.
  + can be justified by considering cost, availability (supply), etc
  + Provide rationale for why the components were chosen compared with other options i.e. appropriateness.
  + mechanical components, assemblies, or sub- assemblies, etc
  + joining of components
  + valid reasons (justification) for your choice need to be presented.

This should be on approximately **two A4** or Letter pages

(ii) Justifies the choice of appropriate **manufacturing techniques** for prototype production

* [Manufacturing techniques](http://www.ruthtrumpold.id.au/destech/?page_id=320) are identified and selected according to the requirements of the prototype including joining, cutting, laser cutting, and so on.
* valid reasons **(justification)** for your choice need to be presented.
* Provide rationale for why the manufacturing techniques were chosen compared with other options i.e. appropriateness.
* can be justified can be justified by considering cost, availability (supply) and/or the working properties of the materials, etc

This should be on approximately **two A4** or Letter pages.

(iii) Develops an accurate and detailed design proposal

* Develop the design to take into account the **choice of materials**, components and **manufacturing techniques.**
* Use CAD, hand drawn, paper/card models and other techniques and methods to finalise the details of the design
* 3D drawings
* Orthogonal (with dimension and appropriate standards/conventions), including part, assembly and [exploded isometric](http://design.tutsplus.com/tutorials/how-to-create-exploded-isometrics--vector-1523) (if needed).
* Design proposal should be in enough detail so that a third party (manufacturer, craftsman) to be able to understand them correctly and be able to manufacture it without help.
* Include details such as sizes, materials, components, assembly, production methods, tools, resources, cutting list, etc.
* Cutting (materials) list or [Bill of Materials](https://en.wikipedia.org/wiki/Bill_of_materials) (BoM.

This should be on approximately **three A4** or Letter pages.

(iv) Produces a detailed plan for the manufacture of the prototype.

* Plan should contain
  + description of tasks
  + **estimated time** of completion of each stage and overall prototype manufacture
  + manufacturing techniques (**equipment requirements)**
  + risk assessment (**health and safety considerations)**
  + quality control (jigs, etc)
  + resources
  + it should be in enough detail for a third party to be able to manufacture the prototype.

Should be presented in the following formats.

* Gantt charts
* Flow diagrams
* Tables

This should be on approximately **two A4** or Letter pages.