

- § Presentations could cover some or all of the following interventions:
 - o How parents can access details of course content eg students have paper copy, posted on GLOW, Wiki, SMHW.
 - o Outline of assessment arrangements – key dates, frequency, conditions.
 - o What parents can do to support (and perhaps what they ought not do).
 - o Where to access information / support on revision skills.
 - o Homework – frequency, where posted eg GLOW, Wiki, SMHW, in class.
 - o Support materials available – what available and where to find.
 - o Arrangements for out-of-class support eg boot camps, study support etc.
 - o Hand-outs for parents to take away.

Design & Manufacture

N4/N5
MR. MACLEAN



The Course is comprised of two assessable units, namely;

Design

- The general aim of this Unit is to develop pupil's skills and creativity in designing a product towards a manufacturing process. Pupils will take a given design brief and develop it to a final concept.
- Existing products will be examined and evaluated.

Materials and Manufacture

- The aim of this Unit is to develop the pupil's skills and creativity in manufacturing a product or prototype.
- Pupil's will manufacture models and prototypes, applying a range of practical skills.
- The Unit is designed to enable the learner to develop an understanding of the impact of materials and manufacturing

Course Outline



- Homework tasks will be issued weekly for design theory lessons. **Every TUESDAY**
- Details shared on **SMHW** though students are encouraged to photograph examples and set own reminders. Download app!!!
- Completed in jotter/ or evidence folder and submitted for feedback
- N5 notes and success book issued to support this.

Homework



Final Assessment is also split into 2 sections.

- Design Assignment

- Mark allocation=60%
- 55marks -design
- 45marks- practical
- N4 undertake an added value unit.
- The students will undertake a SQA brief and spend **6weeks** **unaided** to design and create a prototype that fulfils the criteria of the brief.

- Question Paper

- Mark allocation=40%
- 80 MARKS
- Mock exam Jan 2018
- Both Design assignment and Question paper are marked by the SQA.

Course Assessment



- Students have all notes and lesson aims within an AIFL sheet..

STUDENT REVISION

- SQA website
- Various CDT websites (given within lesson notes on revision stick)
- Leckie & Leckie course notes...
- LUNCHTIME guidance....

design + manufacture	
design	manufacture
the design process I can describe an open brief..... I can describe a closed brief..... I can describe how to analyse a design brief..... I can describe the purpose of a specification..... I can describe the term Circular Economy..... I can describe the term design synthesis..... research, development + evaluation I can describe how to use online research..... I can describe how to use surveys for research..... I can describe how to use user trials for research..... I can create a specification based on research..... I can describe two methods of developing an idea..... I can write meaningful annotations to design..... I can evaluate a design against a specification..... I can evaluate the fitness for purpose of a design..... I can describe how products impact on society..... materials knowledge (wood) I can describe the term softwood..... I can name three types of softwood..... I can describe the term hardwood..... I can name three types of hardwood..... I can describe the term manufactured board..... I can name three types of manufactured board..... I can justify the choice of wood for a design..... materials knowledge (metal) I can describe the term ferrous metal..... I can name three types of ferrous metal..... I can describe the term non-ferrous metal..... I can name three types of non-ferrous metal..... I can describe the term alloy..... I can justify the choice of metal for a design..... materials knowledge (plastic) I can describe the term thermoplastic..... I can name two types of thermoplastic..... I can describe the term thermoset plastic..... I can name two types of thermoset plastic..... I can justify the choice of plastic for a design..... manufacturing techniques I can describe the term CAD/CAM..... I can describe the benefits & disadvantages of CAD/CAM..... I can describe the term Just-In-Time..... I can describe the term Standard Components..... I can describe the term Rapid Prototyping..... I can describe the term Quality Assurance.....	idea generation I can describe the term morphological analysis..... I can describe the term thought shower..... I can describe the term technology transfer..... I can describe the term analogy..... I can describe the term lateral thinking..... I can describe a mood or lifestyle board..... function I can describe the term function..... I can describe the term fitness for purpose..... ergonomics I can describe anthropometrics..... I can describe product psychology..... I can describe the purpose of ergonomics..... I can describe the 5th, 50th and 95th percentiles..... I can calculate appropriate sizes for a product..... market I can describe the term consumer demands..... I can describe the term technology push..... I can describe the term market pull..... I can describe the term niche market..... I can describe the term needs and wants..... I can describe the term marketing mix..... I can describe the term social expectation..... aesthetics I can describe the term shape..... I can describe the term proportion..... I can describe the term texture..... I can describe the term harmony..... I can describe the term form..... performance I can describe the term strength..... I can describe the term durability..... I can evaluate the suitability of a material type..... I can evaluate how easy a device would be to use..... I can evaluate how easy to maintain a product would be..... I can evaluate if a product is too big or small..... prototyping, presenting + planning I can describe the purpose of prototypes..... I can sketch and read orthographic drawings..... I can describe the term durability..... I can create 3D CAD models of designs..... I can illustrate and render design ideas..... I can create a plan to manufacture components..... centre lathe I can describe the process of parallel turning..... I can describe the process of facing off..... I can describe the process of chamfering..... I can describe the process of centre drilling..... I can describe the process of parting off..... I can describe the process of knurling..... I can describe how to drill to a set depth..... I can identify 8 parts of the centre lathe..... I can describe 4 safety rules for using the centre lathe..... I can describe how to centre a tool on a centre lathe..... wood lathe I can describe the purpose of the gouge tool..... I can describe the purpose of the parting tool..... I can describe the purpose of the skew chisel..... I can describe the purpose of the outside callipers..... I can describe how to prepare wood for turning..... I can identify 6 parts of the wood lathe..... I can describe safety rules for using the wood lathe..... I can describe how to sand material on a wood lathe..... I can describe how to set up a wood lathe for turning..... plastic processes I can describe the process of vacuum forming..... I can describe features of a vacuum forming pattern..... I can describe the process of injection moulding..... I can describe the process of bending with a strip heater..... I can describe the process of shaping with a plastic oven..... I can describe how to finish the edges of cut plastic..... I can describe how to join plastic using Tenso..... I can describe how to drill plastic without shattering..... I can describe how to cut plastic without shattering..... I can describe how to mark out plastic..... I can describe how to cut internal shapes in plastic..... I can describe the process of rotational moulding..... joining metal I can describe the process of Spot Welding..... I can describe the process of Brazeing..... I can describe the process of Pop Riveting..... I can describe the process of using nuts & bolts..... I can describe the process of fusing nuts & bolts..... I can describe the process of fusing an internal thread..... I can describe the process of fusing an external thread..... wood joints I can describe how to make a mortise & tenon..... I can describe how to make a dowel joint..... I can describe how to make a housing joint..... I can describe how to make a T-halving joint..... I can describe how to make a cross halving joint..... I can describe how to make a glue & screw joint..... I can describe how to make a butt joint..... I can identify the glue used with wood joints..... shaping & finishing wood I can describe four different wood finishes..... I can describe how to apply a finish to wood..... I can describe how to cut straight lines in wood..... I can describe how to cut curves in wood..... I can describe how to plane an edge on wood..... I can describe three methods of drilling holes in wood..... I can describe how to machine mortise joints in wood..... I can describe how to mark a line parallel to an edge..... I can describe how to mark a line 90° to an edge..... shaping & finishing metal I can describe the process of folding metal..... I can describe the process of dip coating..... I can describe features of a pattern for sand casting..... I can describe the process of sand casting metal..... I can describe the process of die casting metal..... I can describe how to cut internal shapes in metal..... I can describe how to drill holes in metal..... I can describe how to finish the edges of cut metal..... I can describe the process of annealing metal..... I can describe the process of work-hardening metal..... I can describe how to mark a line parallel to an edge..... I can describe how to mark a line 90° to an edge..... making prototypes I can describe the process of wire cutting..... I can describe four possible modelling materials..... I can describe three ways of joining modelling materials..... I can describe the use of templates to make items..... I can describe the advantages of 3D printing.....

N4|N5

Design & Manufacture

Product Evaluation





Support material





PASS PAPERS



MARKING
INSTRUCTIONS

- Department has open door policy, all staff willing to support.
- Specific times for support are...
- Remember 'Free periods' are really study periods and staff may also be able to help then.

Additional Teacher Support

