Coursework Checklist

Research – 15%

Identifying a need
Explain the following to define the design situation clearly in words and drawings/photographs:
- what are the aims of the project?
- who is the product intended for, the target audience?
- how often is the product likely to be used?
- where will the product be used?
- will the existing environment affect the design of the product?
- include the consideration of the work of other designers or practitioners.

Identify user needs
- list all the qualities that you think the intended user may demand of your product
- undertake focussed market research on your target audience to establish their wants/needs
- present a comparative analysis of your results.

Evaluating existing products
- use your specification to evaluate existing products
- present a range of existing products
- explain why you chose the particular products for evaluation (target audience, market sector etc.)
- annotate the important design features of the products and explain how these features may shape or influence the development of your brief and design specification
- annotate the weak design features of the products
- explain why existing products might not fulfil the wants/needs of your target audience.

Design considerations
- produce a 'mood' theme and/or lifestyle board' for your design work
- explain the design features that you think your product must have
- assess the importance of a range of design considerations to your design task
- describe any unique selling points or special features that your product might have.

Research
- identify relevant knowledge and understanding that you will need to help you when designing
- identify the likely sources of this information
- include a section in your folio that contains the information that you intend using.

Design brief and specifications - 15%

- write an initial design brief as a short, clear statement of intent
- make a detailed broad product specification which should be a reflection of the analysis/research work
- include specifications required by a client or consumer
- consider a hierarchy of features to direct and inform the design and manufacture

of a prototype
- use qualitative and quantitative performance criteria
- include the unique selling points of the product.

Generating & Developing design ideas – 25%

Generating Design Ideas
- produce a comprehensive range of initial ideas with mini-development
- include material considerations and possible construction techniques
- annotate the design ideas indicating the strengths and weaknesses of these ideas
- use the specification to assess the strengths/weaknesses of the ideas
- identify ideas, or parts of the ideas, that can benefit from further development
- say why these ideas have potential for further development
- explain why other designs may not be as successful
- make models or mock-ups as appropriate to prove and test the ideas.

Development of chosen idea using ICT where appropriate
- show clearly which idea you have chosen to develop
- integrate aspects of other proposals that would improve the product
- apply as appropriate anthropometric data and explain why this is essential
- develop a detailed design proposal for prototyping
- explain all constructional details
- establish suitable materials and possible alternatives
- identify components and fixings that would be needed
- evaluate the strengths of the developing proposals against the specification.

There must be clear evidence within the learner's work showing:
- detail drawings in orthographic projection as appropriate
- parts drawings if required
- section and/or exploded drawings as appropriate
- pictorial rendered drawings
- a cutting list including materials
- any components and fixings to be used
- patterns or templates as appropriate

Manufacturing a prototype – 25%

Product planning
- produce a production plan for the product
- consider quality assurance and quality control procedures
- list the construction stages for each component
- include the joining and assembly stages
- estimate the time requirements for each operation and include this in your production plan
- identify tools, equipment and processes needed
- identify your personal training needs
- learners will be required to demonstrate that they are aware of innovative steps in the use of materials and sophistication in their use. They should also be aware of the functional properties of components.

Product manufacture
- mark out and make all individual components to tolerances

- prepare necessary joining or processing methods
- check fit of components
- assemble components
- identify any key working properties of selected materials
- ensure high quality finish of the product
- record all construction details and activities in your project report.

Health and safety
- undertake risk assessments for all processes and activities to ensure your own safety and the safety of others
- use appropriate Personal Protection Apparatus
- explain any measures taken by the centre to ensure safe working practice
- undertake a risk assessment of final product
- ensure the user is aware of any risks inherent in the use of the product.

Evaluating – 20%

Evaluating proposal against product specification
- list the specification points
- evaluate the product against each specification point
- use your qualitative and quantitative performance criteria
- show a photograph of the chosen product/system.

Testing
- make reference to any testing/evaluating that has been carried out during the iterative process of designing, i.e. simple models, 3D modelling, CAD modelling, testing of materials
- devise suitable methods of testing the final product
- carry out tests on product/system
- record findings including photographs
- get an end user, from target audience, to perform a user trip and evaluate the product in use
- seek expert opinion on product
- use feedback to evaluate the product against the performance specification.

Suggestions for modifications
- list all aspects of the design that require modification
- produce drawings to show the possible modifications
- if possible, carry out modifications
- obtain feedback on suggested or actual modifications and present this in project report.

You will need to submit your completed sketch book or books with and A3 folder containing the formal pages outline below:

- Brief and Specification
- Pictorial details of final prototype
- Technical details of final prototype
- Production details of final prototype
- Sequence of Production
- Evaluation of prototype
- Modifications and Further developments
- Photographs/CAD of final prototype