

S3 Design and Manufacture

Course Rationale

The S3 Design & Manufacture course will introduce learners to the multi-faceted world of creative thinking, product design and manufacturing. This course will provide a broad practical and theoretical introduction to creative thinking, design, materials and manufacturing processes. This course is distinct in value in that it allows learners to gain skills in both creative exploration and designing that lead to communicating design proposals. Furthermore, learners will explore the properties and uses of materials used to make models and final products through basic workshop practices. Learners will also develop a sense of 'good working practices' and to become proactive in matters of health and safety. It allows them to learn how to use a range of tools, equipment, and materials safely and correctly.

Course Content

The Course is of broad educational benefit. It allows learners to consider the impact that design and manufacturing technologies have on our environment and society. It allows students to consider how technologies have impacted on the world of the designer and manufacturing and how creative thinking can help broaden a design approach to real world problems. Learners will develop skill in creative thinking, how to identify and design with design factors in mind, how to respond to a design brief and simplify and communicate design ideas effectively. Learners will also develop skill in planning for manufacture and prototype development, skill in reading drawings and diagrams, measuring and marking out, as well as cutting, shaping, joining/jointing and finishing materials – in basic workshop skill builders. This course provides a solid foundation for those considering further study in design, manufacturing, engineering, science, marketing and related subjects.

Skills

Areas of study are:

Creative Thinking

Candidates develop the freedom and insight to explore new and innovative approaches to creativity and thinking activities, techniques and processes.

Designing, Development and Communication

Candidates develop skills, knowledge and understanding of design processes, design factors and material properties and how to analyse and respond to a design brief/real world issues. Pupils will also develop skill in how to communicate ideas whilst simplifying a proposed solution. Pupils also progress their ability to spot problems and how to plan for manufacture.

Bench skills

Candidates develop skills, knowledge and understanding in the use of basic workshop hand tools, bench-fitting work, measuring and marking out. Candidates develop their ability to create, read and use drawings for manufacture, how to measure and estimate and consolidate simple mathematical arithmetic.

Machine processes

Candidates develop basic skills, knowledge and understanding in the use of machines, portable equipment and related processes.

Progression

Further levels of study, N4/N5 Practical Woodwork; FA Apprenticeship Construction L4/5; FA Apprenticeship Automotive L4; College/ Apprenticeship or a related career.

Career Pathways

Design led Pathways (Product, Creative, Systems, etc, including Art & Design based), Engineering, Manufacturing, Marketing, Construction, Carpentry/Joinery, Metalworking/Fabrication