DESIGN TECHNOLOGY & ENGINEERING

Apprenticeships
GET IN. GO FAR

CHURCHMEAD SCHOOL

FURTHER EDUCATION

EXTERNAL EXAMINATION

Core content and specialist knowledge: Revise and practice exam papers in preparation for your final exam in Engineering.

AC4.1 Maths in engineering

AC4.2 Choice of processes

AC4.2 Choice of materials

YEAR 11

UNIT 2 SOLVING APPLIED ENGINEERING PROBLEMS

AC3.2 Drawing an engineering design solution to standard

UNIT 2 COMMUNICATING AN ENGINEERED DESIGN SOLUTION

AC1.3 Explain

AC2.3 Communicating engineering ideas through to a the proposed design ideas specificationconclusion solution

AC3.1 Producing an **AC2.2** Developing the function of solution

UNIT 2 PROPOSING DESIGN SOLUTIONS

AC2.1 Generating a range of engineered solutions

UNIT 2 FUNCTION & MEETING REQUIREMENTS

AC1.1 Identification of primary features of a product

UNDERSTANDING

AC1.2 Identifying features of other engineered products

AC4.3 Evaluating engineered products

AC4.4 Evaluate own practices and processes

AC4.2 Working with materials

AC4.1 Application of engineering processes

UNIT 1 USING ENGINEERING TOOLS & EQUIPMENT

AC3.3 Health & safety

AC3.1 Using engineering tools

AC3.2 Using engineering equipment

UNIT 1 USING ENGINEERING TOOLS & EQUIPMENT

AC2.4 Planning and sequencing

AC2.5 Contingency planning

UNIT 1 PLANNING OPERATIONS

AC2.1 Identify **AC2.3** Tool Resources selection Required

AC2.2 Equipment selection

UNIT 1 UNDERSTANDING ENGINEERING DRAWINGS

AC1.2 Interpret engineering information

AC1.3 Presenting engineering information

AC1.1 Interpret engineering drawings & components for production

YEAR 10

SKILLS BOX

Make: Addition processes & wood joints. Using skills to develop high quality products.

Skills: Hand and machine stitching. Accurate use of patterns and scissors.

SLOT TOGETHER ANIMALS

Make: Develop your design through iterative processes, testing & evaluating before making

Skills: Simple Orthographic Projection & Isometric Sketching

AMPLIFIER

Make: Use a wide range of skills, materials and processes to develop your unique product.

Theory: Developing knowledge of the Engineering profession, materials, machinery, tools and processes

YEAR 9

STEM INVESTIGATIONS

Skills: Developing the kneading method and knowledge of raising agents.

BREAD ROLLS / BREAD BASED PIZZA

Skills: Nutritional facts.

SOUP / PASTA SAUCE

Make: Accuracy and neatness Making final model.

Design: Drawing skills, CAD development and modelling.

PAPER DESK TOY

Design: Create a range of designs from a brief.

CUSHION

Make: Can you make an accurate product using machines and tools independently?

Design: Designing for a theme; design development

Make: Develop independence in CAD. Use the laser cutter to produce your final product!

Cams / motions & movements: What do cams do? How do they work?

Design: Drawing skills, CAD development and modelling.

KS4

After choosing options in year 8, focus your studies on Engineering in years 9 -11. Deepen your understanding of Engineering in the world around us.

Work in more depth on projects, honing your practical skills, improving your resilience & problem solving whilst developing independence.

YEAR 8

STEM INVESTIGATIONS

Skills: Learning the kneading method, developing previous skills.

SCONE BASED PIZZA

Skills: Developing the rubbing in method and oven use.

SCONES

Skills: Learning the rubbing in method, knife skills and oven use.

FRUIT CRUMBLE

Skills: Cutting techniques and basic hygiene rules.

FRUIT SALAD

Research & Design: Researching & Designing for a theme; design development based on nature / biomimicry

FABRIC DECORATION

Make: Thermo -Forming Shaping manufactured boards. Basic circuitry and soldering

Design: Designing for a theme; design development

ACRYLIC & PEWTER JEWELLERY

Materials: Skills; Types of metals and plastics, why do we use them? What is CAD / CAM? Learn to use the basics of 2D design.

Materials: Working on cotton with various methods of colour/ image transfer.

KS3

Experience a wide range of fun and exciting projects that teach you valuable skills, understanding different materials and how they work. Every project starts with health & safety and finishes with an evaluation task.

YEAR 7

FISH SCULPTURE

Baseline Assessment: What do you already know about DT?

OPERATION GAME

Materials: Polymers Classification. What is a polymer? What is a circuit?

Materials: Make: Use of hand tools and machines including finishing techniques

Wood classification. Where does timber come from?