

Design & Technology

HoD

Name: Mr D Curran

Email: dec@ifieldcc.co.uk

Year 7

Course Outline



Designing

Students are introduced to “**Freehand Sketching**”, allowing them to break up *real world items* into *basic 3D shapes*; by the Summer term, students are making what they designed.



Making

Students are introduced to several aspects of making within D&T: *card* (“**Pop ups**”), *wood* (“**Belt balancer**”, “**Tug boat**” and “**Moving toy**”) and *plastics* (“**Key tags**”). The initial focus is on *Health and Safety* and traditional workshop tools and equipment; by the Summer term, students are making their own tool and equipment choices and are introduced to *CADCAM* (computer aided design, computer aided manufacturing).



Evaluating

Students are expected to analyse and evaluate their own work, as well as others, throughout the entire *design (and make) process*

Students put these skill into practice through *focussed practical tasks (FPTs)* as well as fuller *design and make assignments (DMAs)*. A great emphasis is put on both individual *students’ ownership* of projects, and ‘*sustainability*’.

Year 8

Course Outline



Designing

Students extend their Year 7 “Freehand Sketching” knowledge and understanding with more advanced “**Designing**”; students are now encouraged to make what they designed.



Making

Students further improve their workshop skills with *focussed practical tasks (FPTs)*, “**Moving toys**”, with more complex *design and make assignments (DMAs)* in *plastics* (“**Name plaque**” and “**Picture frame**”) and *wood* (“**Money box**”).



Evaluating

Students are expected to analyse and evaluate their own work, as well as others, throughout the entire *design (and make) process*

A great emphasis is put on both individual *students’ ownership* of projects, and ‘*sustainability*’.

Year 9 & 10

"With an emphasis on authentic practice, our GCSE (9-1) Design and Technology develops thinking skills leading towards invention and design innovation, to design and make prototypes that solve real and relevant problems, preparing learners to become critical and creative designers, engineers and consumers of the future." (<http://www.ocr.org.uk/qualifications/gcse-design-and-technology-j310-from-2017>)

Course Outline



Designing

Students extend their Year 7 & 8 "Designing" knowledge and understanding with "**Advanced Designing**" and "**Abstract designing**" (biometrics); students are further encouraged to make what they design. Students also further their design skills using *Computer Aided Design (CAD)*.



Making

Students further improve their workshop skills with complete *design and make assignments (DMAs)* in wood, plastics and basic electronics ("**Steady hand games**" and "**Board games**"). Students also further their *graphics* skills by designing and making a simple "**Pop-up book**" by hand and with computers ('GIMP' – a free downloadable substitute for "*Photoshop*").



Evaluating

Students are expected to analyse and evaluate their own work, as well as others, throughout the entire *design (and make) process*

Projects are designed to parallel the course units / structure for GCSE Product Design. A great emphasis is put on both individual *students' ownership* of projects, and '*sustainability*'.

Year 11

"The final year of this A*-G qualification develops thinking skills leading towards invention and design innovation, to design and make prototypes that solve real and relevant problems." (<http://www.ocr.org.uk/qualifications/gcse-design-and-technology-product-design-j305-from-2012>)

Course Outline

The focus from September until February is on the 2 coursework units (60% of the final grade):

- Unit A551: Developing and Applying Design Skills
- Unit A553: Making, Testing and Marketing Products

The remainder of the year focusses on both written and practical exam practise for the final 2 exam units in June:

- A552: Designing and Making Innovation Challenge (2 day)
- A554: Designing Influences (1 ½ hours)

Useful learning tips

- Download “GIMP” as a free digital image manipulator
- Download “Google Sketchup” as a free 3D CAD modelling package
- Look at the world around you and ask questions – How does it work? How is it made? Could I design / make it better?
- Helpful website: <http://www.technologystudent.com>

VI form

Design & Technology: Product Design

“The new AS/A Level Design and Technology qualifications are accredited for first teaching in 2017” (<http://www.ocr.org.uk/qualifications/as-a-level-gce-design-and-technology-h004-h006-h404-h406-from-2017>)

Course Outline

The content of all the new OCR Design and Technology qualifications has been set out in the following sections:

- identifying requirements
- learning from existing products and practice
- implications of wider issues
- design thinking and communication
- material considerations
- technical understanding
- manufacturing processes and techniques
- viability of design solutions
- health and safety

A level (2 years: H004-H006)

Unit 1 - ‘Iterative Design Project’ *is a substantial design, make and evaluate project centred on the iterative processes of explore, create and evaluate (50%)*

Unit 2 - The ‘Principles’ examination paper *assesses analysis of existing products, technical knowledge and understanding of materials, product functionality, manufacturing processes and techniques and allows you to demonstrate your understanding of design thinking and wider social, moral and environmental issues that impact on the design and manufacturing industries (26.7% - 1 ½ hours)*

Unit 3 - The ‘Problem Solving’ paper *requires learners to apply their knowledge and understanding through higher level thinking skills, reflecting on the viability of products and possible design solutions in context and being able to make critical judgements on the most appropriate methods and outcomes. (23.3% - 1 ¾ hours)*

AS level (1 year: H404-H406)

Unit 1 - 'Product Development', this will be on a given context that is open to your interpretation (50%)

Unit 2 - The 'Principles' examination paper assesses analysis of existing products, technical knowledge and understanding of materials, product functionality, manufacturing processes and techniques and allows you to demonstrate your understanding of design thinking and wider social, moral and environmental issues that impact on the design and manufacturing industries (50% - 1 ½ hours)

Subject Links

STEM related subjects (www.STEMatICC.com) including Science, Maths, Information & Communication Technology, Art & Design, Photography, Business Studies, Sociology, Dance & Drama

Career progression

You will become accredited with a desirable range of transferable skills together with a broad knowledge of the design practice and contemporary technologies. Product Design opens doors into art & design, graphic design, engineering, media & communications, marketing & advertising, fashion, interior design and architecture.

CREST Awards

Recognised on UCAS applications, students are given several opportunities to participate and become accredited with CREST Awards from the British Science Association

Further requirements

£20 donation to cover the cost of workshop consumables

STEM



STEM-related subjects include Maths, Science, Design & Technology / Food and ICT:

- www.STEMatICC.com
- STEM@ICC YouTube channel
- Twitter #STEMatICC

Facebook @STEMatICC