RGS Design Technology Course Summary 2018-2019

	First Form		Second Form		Third Form
Project 1 11 Weeks	**Box Project** • Health & Safety • Introduction to Tools & Machinery • Research focus on Hardwoods/Softwoods/ Manufactured Board. • Research focus on Thermo/Thermoset Plastics • Focus on good workshop practice • Wood Jointing • CAD/CAM in Industry	**Project 1** 11 Weeks	**Introduction to Graphics** Drawing Techniques: • Isometric • 1 & 2 Point Perspective • Orthographic • Exploded • Freehand Sketching • Rendering Focus on Packaging Nets CAD • Introduction to SolidWorks. • Manufacture Project using Polymorph for concept modelling.	**Project 1** 1st Term **Project 2**	**Concept Design** • Design Concepts • Form v Function • Research Techniques (Advanced) • Free Drawing • Design Innovation • Modelling Techniques • Focus on Materials • Introduction to Presentation • 'Dragons Den' style pitch. **CAD** – Introduction to SolidWorks Modelling **Enterprise Project** • Christmas Theme • Group Work • CAD/CAM • Business Plan

Project 2 11 Weeks	**Natural Form** • Primary & Secondary Research • Introduction in Ferrous/Non Ferrous /Alloys • Specification Content • Designing using Natural Form influences • Manufacture using sheet metal. • Use of CAD/CAM • Manufacture using Casting process & Enamelling • Evaluation Techniques Introduction	**Project 2** 11 Weeks	**Design Time** • Focussed Research (Famous Designers) • Design Innovation • Sketching/Isometric/ Orthographic/Exploded • Manufacture using range of materials and focus on properties of materials. • CAD/CAM (Laser Cutting/Vinyl Cutter) • Evaluation (Advanced)	**Project 3** 2nd Term **Project 4**	**SolidWorks** • CAD/CAM • Joining Methods • Working to Tolerances • Design Development **CAD** – Development in SolidWorks **Drawing Techniques** • Freehand skills including Isometric, Perspective. • Rendering • Annotation
				Project 5 3rd Term	**Games Project** • Group Project relating design and manufacture with the theoretical content learned throughout the year.
				Theory for 3rd Form	• Students will learn about properties of materials. • Study into: Woods, Metals, Plastics, Textiles, Smart materials.

GCSE Design Technology

	Fourth Form	**Fifth Form**
Project 1 11 Weeks	**Theory** **Developing, Planning & Communicating Ideas** • Brief & Specification **Product Analysis** **Sustainability & Legislative Issues** • Six 'R's'	**Theory** **Tools. Equipment & Manufacture** • Accuracy & Precision • Correct choice of Tools **Manufacture** • Plan for Manufacture

	• BSI, CEN, ISO **Designers/Practitioners** • Research Jonathan Ive & Vernor Panton **Commercial Manufacturing Practises** • Types of Manufacture • Consumer Protection • Flat Pack Furniture • The Purpose of Packaging **Materials & Components** • Wood/Metal/Plastic/Card/Paper • Commercial Packaging Materials • Control Components • Micro & Nano Technology • Composites	• 3D Modelling • **ICT & CAD/CAM** • Word Processing/Spreadsheets/ Presentations • Vector & Rastor **Systems & Processes** • Flow Diagrams • Microprocessors • CAM for increase accuracy and repeatability • Wasting/Reforming/Deforming/ Fabricating
	Introduction into Eduqas Product Design Course **Portfolio** • Analysis of the Task • Specification • Generation of Ideas • Development & Modelling • Final Solution – Graphical Presentation • Final Solution – Technical Details • Creative Thinking **Manufacture** • Plan for Manufacture • Manufacture, Difficulty, Quality, Accuracy, Finish • Evaluation • Modification	**Final Project** **Portfolio** • Analysis of the Task • Specification • Generation of Ideas • Development & Modelling • Final Solution – Graphical Presentation • Final Solution – Technical Details • Creative Thinking **Manufacture** • Plan for Manufacture • Manufacture, Difficulty, Quality, Accuracy, Finish • Evaluation • Modification

A-level Product Design

	Sixth Form	Seventh Form
Component 1	**Theory** **Designing & Innovation** • Principles • Research • Analysis of Problem • Ergonomics • Innovation • Design Detail **Product Analysis** • Production Method • Form v Function • Trends/Styles/Fashions **Materials & Components** • Materials, Components & potential application • Working Characteristics of materials • Modern material Tech. • Choosing Materials • Components & Application **Industrial & Commercial Practices** • Employment & Commercial Practises • Manufacturing Systems • Stages of Production • Detailed Manufacture Methods • Management Systems • Safe Working Practises	**Theory** **Human Responsibility** • Customer & Legal Requirements • Legislative Frameworks • Risk Assessment • Values Implicit in Product Design • Forms of Energy Used. **Public Interaction – Marketing** • Innovation in the Market • Researching the Market • Selling the Product • Diffusion of Products • Influences on Design **Processes** • Hand Methods of Preparation, Processing & Manipulating Materials • Machine Methods of Preparation, Processing & Manipulating Materials • Combining Materials to Enhance • Computer Aided Manufacture **Production Systems & Control** • Use of Systems/Sub-Systems for Manufacture Management • Control Systems • Use of ICT in Industry
Component 2	**A Level** **Portfolio** • Product Analysis & Research • Developing a Specification • Generating & Developing Ideas • Detail Designing • Evaluating & Decision Making • Communication & Key Skills	**A level** **Manufacture** • Detail Designing • Evaluating & Decision Making • Communication & Key Skills • Planning for Manufacture • Selecting & Testing Materials & Processes • Use of Materials & Processes • Accuracy, Quality and Finish • Functionality & Innovation