

S2

**Design
and
Manufacture**

- Sketching – 2D and 3D
- 3D Computer modelling using Autodesk Inventor and Techsoft 2D design
- Wooden Joint exercise
- Trowel Project
- Small shelf
- Idea Generation
- Torch Design
- Scottish Sports Medal

Course Content

- All necessary stationery equipment
- Computers with 3D modelling software
- Modelling materials such as Card and Foam
- Project materials in wood, plastic and metal
- **Laser cutter** to enhance project work
- Modern Design Studios and Workshops
- GLOW
- Course Textbooks by Leckie & Leckie
- **3D Printer**



Resources Provided

S2 Timeline

S2 Design & Manufacture Course					
Week No.	The S2 DMM course consists of Project Links to develop Practical Skills, Design basic, Manual Graphics, Computer Aided Modelling and a Knowledge of Tools, materials and processes. The weeks will rotate between the classroom and workshop every 3 weeks. Detailed activities are the lessons taken within the classroom while the beige colour indicates time in the workshop.			Homework will generally be given every fortnight.	
JUNE	1	S2 Group A 2D Freehand sketching: Ortho sketching Dimensioning	I/W - Freehand sketching basics H/W - Multiple choice ortho Marks H/W - Ortho sketching task 1 Summer Holiday	S2 Group B Induction Safety / Third Function Housing, cross-hatching, hatching & lined joints	H/W - Safety 1
	2				
	3				
AUG	1			2D Freehand Sketching: Ortho sketching Dimensioning	H/W - Freehand sketching basics H/W - Multiple choice ortho blocks H/W - Ortho sketching task 1
	2	Safety / Third Function Housing, cross-hatching, hatching & lined joints	H/W - Safety 1		
SEPT	3				
Interim Report	4		H/W - Ortho sketching practice sketching	Trowal Manufacture Blade, stem & handle	H/W - Safety 2
	5	Pictorial Sketching: Oblique, Isometric, 1 Point Perspective, Pencil rendering	I/W - 1 point perspective H/W - Rendering oblique & isometric blocks		I/W Identification of sequence of operations
	6				
OCT	7	Trowal Manufacture Blade, stem & handle	H/W - Safety 2	Pictorial Sketching: Oblique, Isometric, 1 Point Perspective	H/W - Oblique/Isometric practice sketching H/W - 1 point perspective
	8				
October Holiday					
NOV	9	Trowal cont.	I/W Identification of sequence of operations	Pencil rendering	H/W - Rendering oblique & isometric blocks
	10	JU Modelling Autodesk Inventor 1. Shape Sorter 2. R-1 Use Fixture Component parts, Assembly, Examine	H/W - 3 view ortho Mult view sheet H/W - Trowal in a Box I/W - Inventor Desk Lily	Picture Frame Manufacture: Full frame: Range of joints, Router, Laser engrave	H/W - Hardwoods and softwoods
	11				
	12				
DEC	13	Picture Frame Manufacture: Flat Frame: Range of joints, Router, Laser engrave	H/W - Hardwoods and softwoods	JU Modelling Autodesk Inventor 1. Shape Sorter 2. Picture Frame Component parts, Assembly, Drawings	Introduction sheet H/W - Isometric Mult view sheet I/W - Inventor Box I/W - Inventor Desk Lily
	14				
	15				
	16	Term 2 Design Brief, Research, Spec, Design		Christmas related manufacturing project	
JAN	17				
	18	Tech design cont.	H/W - Multiple material research	Picture frame cont.	I/W - Design Issues worksheet

Interim Report	19	Picture frame cont.				
FEB	20	Tech Modelling Modelling using a range of modelling materials	H/W - Design Issues worksheet		Tech Design Brief, Research, Spec, Design/3D	H/W - Modelling material research
	21					
	22					
MAY	23	Desktop Storage Design	I/W - Desktop storage research H/W - Desktop storage design ideas		Tech Modelling Modelling using a range of modelling materials	I/W - Material Properties
	24					
	25	Desktop Storage Manufacture	H/W - Material properties		Desktop Storage Design	H/W - Desktop storage research I/W - Desktop storage design ideas
	26					
	27	Idea Generation Techniques Create a poster			Desktop Storage Manufacture	
	28					
Easter Holiday						
APR	30	K & U Design Factors Materials	I/W Design Factors 2		Cont.	
	31					
MAY	32	Continuing incomplete projects			Idea Generation Techniques Create a poster	
	33				K & U Design Factors Materials	I/W Design Factors 2
Full Report	34	K & U Joining Methods Finishes	H/W - Investigation into environmental resources H/W - Product evaluation		Continuing incomplete projects	
	35					
JUNE	36	Continuing incomplete projects			K & U Joining Methods Finishes	I/W Investigation into environmental resources
	37				Group Product Evaluation	I/W Product evaluation
	38					
	39					

Timelines

- *How to Analyse a Brief, carry out Research and produce 2D and 3D Designs*
- *How to Annotate their designs*
- *Produce 3D computer models*
- *Read and Interpret Working drawings*
- *Measure and Mark-out and use various Hand Tools to produce Wooden Joint Exercises and Picture Frame*
- *Mark-out and use various Hand Tools to produce a small Garden Trowel in Metal.*

Skills Developed

- Skills Based, by Response
- Pupil Assessment
- Peer Assessment
- Folio work
- Project work
- Homework
- S3 Class Test
- S4 National Qualifications

Forms of Assessment

- Additional support from PSA's and co-op teachers, as required.

Additional Support