

PROCESS**CONTENT****Design**

the design process
identification of function and evaluation of good/bad design
specifications
planning manufacture, cutting list, material list

Aesthetics

appearance, colour, line, shape, form, proportion,

Anthropometrics

understanding relevance of size differences

Ergonomics

awareness of objects in relation to hands, limbs, eyes and sitting, standing and working positions. Interaction with the human body.

Finishing

Preparation of surfaces appropriate to the material. knowledge of stages in the finishing process. knowledge of common finishes

Joining metal

awareness of welding and electrical soldering. knowledge of adhesives
pop-rivets, nuts, bolts, self-tapping screws

Joining wood

Carcass joints - rub, dowel, housing, knock-down fittings
frame joints - dowel, mortise and tenon, lap screws, nails, adhesives

Shaping metal

filing, forging, drilling, sawing, shearing, casting and bending

Turning metal

parallel and step turning in 3-jaw chuck, drilling, facing off, parting, knurling, taper turning using compound slide

Shaping wood

sawing, chiselling, sanding, boring

Turning wood

between centres. use of gouge, parting tool

Assembly

cramping/clamping, squaring, testing for winding

Plastics

cutting, filing, polishing, bending, joining, cementing

awareness of vacuum-forming

Heat treatment

knowledge of annealing, hardening and tempering

Selection of materials

knowledge of a range of common material – woods, metals and plastics

TOOL	PROCESS	
Anvil	forging	
Bending bars	bending	
Bits	Auger	boring
	Flat	large diameter
	Irwin/Fostner	flat bottom
	Twist	normal
	Rose	countersinking
	Hole Saw	large diameter
Bradawl	boring, screwing	
Callipers	inside	measurement inside diameter
	odd-leg	marking-out parallel to edge
	outside	measurement outside diameter
Casting	cope and drag	casting (terminology)
	crucible	
	degassing	
	riser	pouring out
	runner	pouring in
	ramming dolly	packing sand
	green sand	'petrobond'
Chisel	bevel-edge	shaping wood
	firmer	
	mortise	
Cork block	finishing (sanding)	
Cramps	G	assembly
	Sash	
Dies (split-circular)		threading (external)
	opening screw	
	closing screws	
Dividers	marking-out circles or arcs	
Drill	hand	drilling metal/plastic/wood
	pedestal	
	power (hand)	
	wheel brace	
	brace and bit	
End cutter (rivets)	joining metal	
Engineers Square	marking out/checking squareness	
File card	shaping metal (cleaning files)	

Files	Abra	shaping metal /plastic/wood
	bastard	shaping metal
	half-round	shaping metal
	needle	
	round	
	second-cut	
	fine	
	square	
	Surform	shaping wood
Fluider		plastic coating
Forge		forging, heat treatment
Glue gun		adhesives
Goggles		safety
Hammer	ball-pein	shaping/joining metal
	claw	joining wood
	cross-pein	
Heater	oven	shaping plastics
	strip	
Iron (electric)		finishing wood
Lathe	metal	turning metal
	wood	turning wood
Lathe work	facing tool	turning metal
	knurling tool	
	parting tool	
	Parallel turning	
	taper turning	
	cross-slide	
	compound slide	
	tool post	
	roughing tool	turning wood
	gouge	
	parting tool	
	driving fork	
	tool rest	
	dead centre	turning wood/metal
	live centre	
	tailstock	
	head stock	

Mallet	beech	shaping wood
	hide	shaping metal
Marking gauge		marking-out (parallel to edge)
Micrometer (outside)		measurement
Mortise gauge		marking-out (mortise and tenons)
Mortising machine		joining wood
Orbital sander		finishing wood
Plane	jack	shaping wood
	smoothing	smallest plane
	jointer	biggest plane
Pliers		general usage
Punch	centre	marking-out/drilling metal
	nail	joining wood
Rivets	countersunk	joining metal
	snaphead	
Rivet Sets		joining metal
Router (2-handed)		joining wood
Rule		measurement
Saw	bandsaw	shaping wood
	copi ng	
	j i gsaw	
	panel	
	tenon	
	hacksaw	shaping metal
	j uni or	
Sawing board/block		general woodwork
Screws	countersunk	
Screwdriver	slot	joining
	crosshead	
Scriber		marking-out (metal)
Tin Snips (straight)		shaping metal
Soldering bolt		soft soldering (electrical)
Taps		threading (internal)
Try-square		marking-out/checking squareness
Vice	bench	general woodwork
	engi neer' s	general metal work
	hand	
	machi ne	
Wel di ng		awareness of wel di ng/spot wel di ng