



*For Performance Measurement*

**ZIMBABWE SCHOOL  
EXAMINATIONS COUNCIL  
(ZIMSEC)**

**ORDINARY LEVEL SYLLABUS  
2013 – 2017**

**Woodwork 6035**

## **1.0 PREAMBLE**

This syllabus is intended to provide a course in woodwork which fosters the development of both manual and intellectual skills. The approach to the subject which is advocated in this syllabus is problem centred and tries to involve pupils in planning and designing their practical work. This approach encourages the acquisition of technical skills and knowledge, leading to self-reliance, which are relevant to the requirements of trade and industry in Zimbabwe.

## **2.0 AIMS**

The aims of the syllabus are to:

- 2.1** give pupils an elementary technical course to prepare them to cope with the technical side of their environment and to give them a basis for vocational experience;
- 2.2** give pupils an understanding of economic and social factors in the world of industry and work;
- 2.3** encourage self-reliance and commitment to community development;
- 2.4** develop in pupils a positive attitude towards work (determination, tenacity, open-mindedness, flexibility, adaptability, co-operation) so that they can meet the requirements of their future professions;
- 2.5** develop a degree of expertise in creative thinking;
- 2.6** enable pupils to use their knowledge and skills to solve technical problems through a process of designing, making and evaluating the results;
- 2.7** encourage technological awareness, foster team approach to problem solving and social responsibility, and develop abilities to improve the quality of the environment;
- 2.8** stimulate the exercising of value judgements of an aesthetic, technical, cultural, economic and moral nature;
- 2.9** stimulate the development of a range of construction skills using wood and other materials;
- 2.10** develop in pupils the ability to use hand or machine tools safely and effectively;
- 2.11** promote the development of curiosity, enquiry, initiative, ingenuity, resourcefulness and discrimination.

### **3.0 ASSESSMENT OBJECTIVES**

By the end of the course, pupils should be able to:

- 3.1** state and apply facts, concepts and principles related to the design, realization and evaluation of a piece of furniture in the light of available resources;
- 3.2** demonstrate graphic and verbal communication skills necessary to give information about a piece of furniture in a clear and appropriate form;
- 3.3** identify basic hand tools and describe their construction;
- 3.4** demonstrate knowledge of safe use and maintenance of basic hand tools and machines;
- 3.5** select the appropriate types of adhesives, furniture hardware and fittings and use them correctly;
- 3.6** identify types of wood commonly used in schools and industry in Zimbabwe and describe methods of processing trees into usable timber;
- 3.7** describe the structure of various manufactured boards commonly used in schools and industry and use them appropriately;
- 3.8** choose and make suitable joints appropriate to a given piece of furniture;
- 3.9** identify and apply a suitable finish to a piece of furniture;
- 3.10** calculate the price of an article based on the cost of material and the time for work;
- 3.11** demonstrate knowledge in simple roof construction and fitting of doors;
- 3.12** solve a given problem following a design brief;
- 3.13** satisfy all safety requirements during the planning and making of an artifact.

## SPECIFICATION GRID

Assessment Objectives	Paper 1 Theory/Drawing	Paper 2 Practical	Paper 3 Project
<b>3.1</b>	*		*
<b>3.2</b>	*	*	*
<b>3.3</b>	*		
<b>3.1</b>	*	*	*
<b>3.2</b>	*		*
<b>3.6</b>	*		
<b>3.7</b>	*		*
<b>3.8</b>	*	*	*
<b>3.9</b>	*		*
<b>3.10</b>	*		
<b>3.11</b>	*	*	
<b>3.12</b>			*
<b>3.13</b>	*	*	*
Weighting	40%	40%	20%

OBJECTIVES/COMPONENTS	PAPER 1	PAPER 2	PAPER 3	AVERAGE %
Knowledge with understanding	45%	40%	15%	33%
Practical skills and their application	20%	50%	45%	38%
Decision making and judgement	35%	10%	40%	29%
TOTALS	100%	100%	100%	100%

### 4.0 NOTES FOR THE GUIDANCE OF TEACHERS: THE DESIGN PROCESS

This syllabus is intended to emphasise the problem solving approach which is pupil centred rather than teacher centred.

The teacher is advised to allow pupils to examine tools, machines and other equipment during theory lessons. Theory should also be an integral part of practical work.

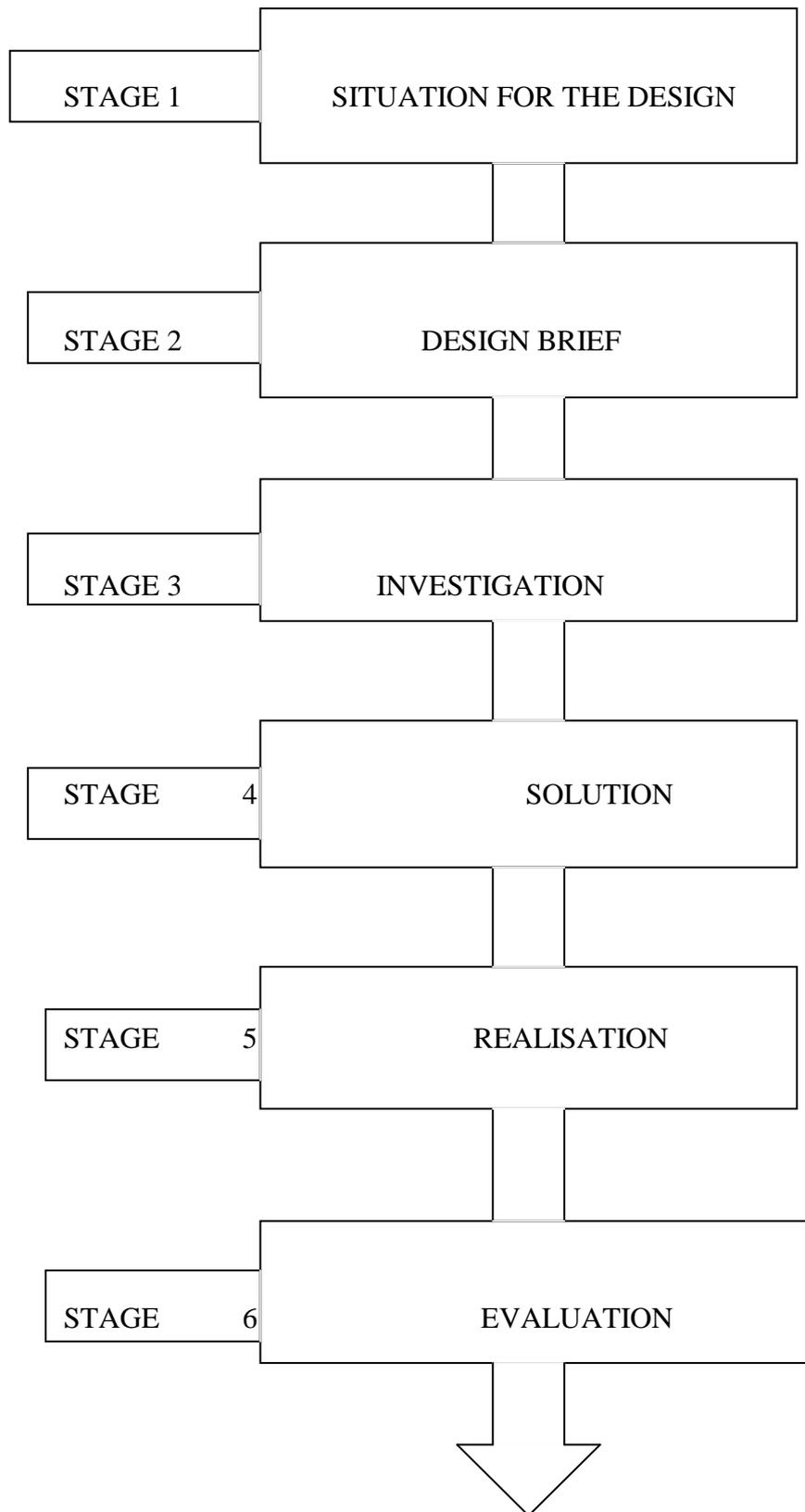
The problem solving approach implies pupils' involvement in the process of designing the artefacts they intend to make during practical lessons. The role of the teacher in this regard, should be that of a guide encouraging teacher-pupil dialogue. A teacher dominated approach, which stifles initiative, decision making and self-reliance should be discouraged.

In order to enable students to solve design problems, especially in their coursework, they should gain a sound knowledge of tools and methods of construction in woodwork. Pupils should be able to apply this knowledge by transferring it to new situations.

Workshop calculations should be an integral part of every practical project carried out rather than being treated in isolation.

Wherever possible, group work should be encouraged both in theory and practical work.

## THE DESIGN PROCESS



## 5.0 CONTENT

Topic	Notes
<b>5.1 Safety</b>	
Personal	Protective clothing. Washing hands after using wood finishes or glue etc.
Tool	Storage, use and handling.
Floor	Keeping workshop floor clean. Avoiding spilling paint, varnish, glue etc. on the floor.
Benches	Keeping tools in the well of the bench.
Materials	Storage of and carrying timber
Machines	Permission to use equipment. Wearing of goggles or shields. Avoiding overcrowding at a machine etc.
General room conditions and requirements	Ventilation, control of voice in the workshop. First Aid Kit: its location, content and use.
<b>5.2 Hand Tools</b>	
Construction	Knowledge of parts of tools. Function of each part.
Uses	Knowledge of how to use each tool correctly. Practical experience in using woodwork tools generally used in a woodwork shop. (Tools not available may be taught in theory.)
Sharpening	Correct use of an oil-stone, sharpening chisel and plane blades; grinding angle; sharpening angle; (pupils are to practise sharpening on a block of wood before they can be allowed to use an oil-stone. Sharpening saw teeth should be done by a professional saw sharpener but the theory of sharpening saws should be taught.
Maintenance	How to avoid rust on tools. How to keep vices and cramps in good working condition. Replacing missing saw screws. The making of saw handles and hammer handles is to be encouraged.

### **5.3 Woodwork Machines**

Uses

Safe and correct use of powered hand tools, and wood turning lathe.

Pupils should be aware of circular saws and planers, and the purposes for which they are used.

### **5.4 Construction and Processes**

Preparation of  
Material

Correct order of planing wood to given size, e.g. face side, face edge, appropriate face marks, gauging.

Marking Out and Cutting

Marking out in pairs or sets for any given construction.  
Correct use of jigs or templates.  
Correct procedure for cutting of joints.

Trial Assembly

Testing and correct fitting of joints and squareness of a frame.

Cleaning

Correct procedure for planing a glued construction using a finely set plane.

### **5.5 Joining**

Use of glue and other types of modern adhesives for wet or dry conditions.

Use of screws, nails, furniture hardware, fittings including magnetic and nylon catches.

Common woodwork joints and their application in furniture making.

Knowledge of three main types of furniture construction; stool and table construction; flat frame construction; box and carcass construction including drawers; veneering.

### **5.6 Joinery**

Basic joinery involved in simple windows and to include door construction, fitting and hanging of doors and glazing.

### **5.7 Carpentry**

Simple roofs and coverings. (Where there are opportunities pupils should take part in the actual roofing. Where this is not feasible pupils should make miniatures.)

<b>5.8 Upholstering</b>	Use of mealie husks, ilala, hide strips, cord, cotton waste or foam rubber with cloth or rexine covering.
<b>5.9 Wood Finishing</b>	Glass and abrasive paper or cloth. Stains and polishes including water repellent/heat resisting hard finishes and preservatives. (Where possible pupils may be encouraged to experiment with leaves, roots, and barks of local trees for wood finishing.)
<b>5.10 Timber</b>	Sources and properties of wood commonly used in schools as well as in industry in Zimbabwe.  Identifying hardwood and softwood.  Felling, conversion (two methods) seasoning of timber as practised in Zimbabwe.  Defects in timber.
<b>5.11 Technology</b>	How tools work e.g. hand drill, ratchet brace.  Testing the strength of glue.  Simple testing of moisture content in wood.  Appropriate technology, e.g. homemade wheelbarrows, carts etc.  Simple structures and factors affecting their rigidity.  Simple application of cams, gears, levers and linkages in the construction of toys and pieces of furniture e.g. folding stools, needlework boxes.
<b>5.12 Graphics</b>	
Sketches	Three and two dimensional freehand sketches on plain or grid paper. Isometric. Oblique. Perspective (two point).
Orthographic Drawing	Use of drawing instruments. Basic geometric constructions. First Angle Projection. Scale drawing.

Sections.  
Common conventional symbols.  
Dimensioning and hand-lettering.  
Drawing isometric or oblique projections from orthographic drawing and vice versa.

Exploded views of joints or parts of a furniture construction including a cutting list and title block. (Where it is appropriate, the use of pencil shading and colour in drawing should be encouraged.)

**5.13 Management of Resources** Use of card paper and other cheap materials to make mock-ups.

Using material economically.

Knowledge of cost of materials.

Calculation of cost of an artefact including time and labour.

**5.14 Optional Topics** These topics will not be examined in Paper 1 or Paper 2 but could form part of Paper 3 Coursework.

Use of Metal or Plastic

Use of ferrous and non-ferrous metals.

Making simple furniture fittings.

Cutting and shaping plastic.

Wood Carving,  
Sculpture and  
Free Form-Work

Functional Items

Farm or household items.  
Appropriate technology.

Wood Turning

## 6.0 SCHEME OF ASSESSMENT

Three papers will be set:

**PAPER 1** Theory, Graphics and Design (3hrs) (40%)  
Paper 1 contains 3 sections:

Section A Ten short answer theory questions. (20 marks)

Section B Four structured theory questions from which candidates answer two questions.  
(20 marks)

Section C Compulsory question on graphics and design based on a piece of furniture or other wooden construction within the experience of the candidates. (40 marks)

**PAPER 2** Practical (3 hrs) (40%)  
Practical piece set within the limit of the content Section 5.2, 5.4-5.9.

Candidates will be required to work from dimensioned sketches, written descriptions or from scale drawings.  
Papers 1 and 2 will be marked externally.

**PAPER 3** Coursework (20%)  
This is in the form of a design brief set by ZIMSEC, Harare. It consists of two components: the design log-book and the complete artefact.  
Coursework should start during the first term and be completed by the end of July during the final year of examination. This work will be marked by teachers and moderated by Coursework Assessors appointed by ZIMSEC. Teachers will be provided with a marking scheme when the design brief is circulated to schools.