

WorldSkills Standards Specification

Jewellery

Creative Arts and Fashion



THE WORLDSKILLS STANDARDS SPECIFICATION (WSSS)

GENERAL NOTES ON THE WSSS

The WSSS specifies the knowledge, understanding, and specific skills that underpin international best practice in technical and vocational performance. It should reflect a shared global understanding of what the associated work role(s) or occupation(s) represent for industry and business (www.worldskills.org/WSSS).

The skill competition is intended to reflect international best practice as described by the WSSS, and to the extent that it is able to. The Standards Specification is therefore a guide to the required training and preparation for the skill competition.

In the skill competition the assessment of knowledge and understanding will take place through the assessment of performance. There will only be separate tests of knowledge and understanding where there is an overwhelming reason for these.

The Standards Specification is divided into distinct sections with headings and reference numbers added.

Each section is assigned a percentage of the total marks to indicate its relative importance within the Standards Specification. This is often referred to as the “weighting”. The sum of all the percentage marks is 100.

The Marking Scheme and Test Project will assess only those skills that are set out in the Standards Specification. They will reflect the Standards Specification as comprehensively as possible within the constraints of the skill competition.

The Marking Scheme and Test Project will follow the allocation of marks within the Standards Specification to the extent practically possible. A variation of five percent is allowed, provided that this does not distort the weightings assigned by the Standards Specification.

WORLDSKILLS STANDARDS SPECIFICATION

SECTION		RELATIVE IMPORTANCE (%)
1	Work organization and management	20
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> • Procedures for checking and maintaining specialist individual tools and shared workshop tools and machines • Safe operation and maintenance of shared workshop machines and individual tools • Procedures for the secure storage of jewellery and materials • Risks attached to the use of natural and propane gas, oxygen, electricity, acid, and chemical products • Legislation and best practice relating to health and safety • Legislation and regulations relating to the purchase, production and sale of precious metals, gemstones and finished pieces • History and tradition of specialist jewellery making techniques used in past periods and in different countries • Specialist terminology relating to precious metals and jewellery making • Out-sourcing to external contractors for the purposes of electro-plating and the electro-plating process, gemstone mounting and the gemstone mounting process. 	

	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Provide expert advice and guidance on jewellery manufacturing techniques for a specific design proposal • Assess and plan for the separate tasks and operations necessary for the manufacture or repair of jewellery components and assembly of completed jewellery pieces • Accurately interpret proposals for manufacture of jewellery components or complete jewellery pieces including: <ul style="list-style-type: none"> • Technical drawings • Sample pieces • Sketches or rendered images from 3D digital models • Interpret technical terminology and symbols • Determine time, materials and equipment necessary to complete projects • Work with a high degree of accuracy and precision on fine and delicate pieces • Apply correct procedures for reduction of wastage and retention of precious metal filings for re-use • Comply with the health and safety regulations and procedures of the country or region where working • Use personal protective equipment (PPE) and clothing sturdy enough to protect the user from small pieces of flying or incandescent metal • Operate machinery and tools in a manner that avoids risk to him/herself or others within the workshop • Proactively maintain continuous professional development in order to aware of fashion trends in jewellery design, specialist manufacturing techniques and developments in technology 	
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2	Design jewellery components	10
	<p>The individual needs to know and understand</p> <ul style="list-style-type: none"> • Design resources and where to locate them • Research techniques and available resources • Social trends, cultural/environmental/social context • Relevant industry literature • Existing designs, ethical and competitive considerations • Applicable industry standards or regulations • Brainstorming techniques for research/idea development • Design principles including form, function, harmony, line definition (interpretive/actual) • Drawing media and their functions/applications including paper, watercolour, pastel/ink/pencil • Drawing tools and their functions/applications including stencils, rubbers etc. • Computer Aided Design software • Design documentation • Form drawing development • Geometric forms and drawing techniques e.g. cones, cylinders, cube, rectangle, sphere etc. 3D concept, axis lines, conversion of 2D to 3D concepts, depth, perspective and scale (1,2,3 point) • Enhancement techniques • Available manufacturing technologies and their suitability for jewellery manufacture • Types of working drawings and their uses • The inter-relation between technical and design drawings • Industry requirements and availability of industry expertise • Hazard and control measures associated with preparing jewellery designs • Safe work practices 	

	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Read and interpret information on specifications, design documentation, illustrations, design drawings and other applicable source documents • Identify purpose and needs, including design restraints, budget considerations, item end-use, proportions and desired features, available materials • Check and clarify information • Develop research/ideas to sufficient level to determine customer expectations and/or design outcomes • Evaluate abstract and applied concepts/data for use in a commercial environment • Interpret design concepts/drafts as appropriate for client/industry technician • Collect and collate data relevant to design • Communicate concepts in terms suitable to relevant customer or other contacts e.g. engineer, master pattern maker • Document and maintain design processes, features and design development notes • Produce basic form drawings that accurately reflect the design concept • Use balance, proportion, highlights, shadowing, texturing effects appropriately • Select technologies suitable for the manufacture of items • Undertake numerical operations, geometry and calculations within the scope of the unit 	
3	Manufacture of precious metal alloys	5
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> • Content of precious metal alloys and the impact that additives have on the precious metal in terms of colour, pliability and durability • How alloys react to various processes used by the jewellery maker • Properties of precious metal alloys and their solders • Laws and regulations relating to precious metal content for sale and export • Assaying processes and procedures for the country of operation, purchase and sale of jewellery products • Assaying marks delineating precious metal quality • Formats in which precious metals are sold 	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Recognize authenticity and quality signs for precious metals • Source precious metals of the correct price and quality for jewellery manufacture • Calculate the proportions and quantities of fine precious metals and base metals required for any predetermined quantity of any recognized precious metal alloy • Cast precious metal alloy ingots and bars of any predetermined weight, with a minimum of residual impurities, ready to be milled or rolled in preparation for the manufacture of jewellery components 	

4	Preparation of precious metal alloys for the manufacture of jewellery components	10
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> • Properties and applications of various recognized precious metal alloys • Procedures for transformation of precious metal alloy ingots in preparation for the manufacture of jewellery components • Applications and uses for various recognized precious metals 	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Manufacture precious metal sheet or square wire, and reduce to any pre-determined thickness using manual or electrically powered polling mills • Manufacture and reduce thickness of square or round wire in precious metal alloys to any pre-determined dimensions using drawing banks • Manufacture round wire from square wire, and reduce to any pre-determined diameter using a drawing bank 	
5	Manufacture of simple jewellery components	20
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> • Various jewellery components and their uses • Techniques and methods for forming and constructing components 	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Manufacture Chenier/tube and reduce to any predetermined diameter using a drawing bank • Transform precious metal alloy sheet, wire or Chenier/tube into basic jewellery components by means of bending, shaping and forming so as to conform to any shape pre-determined by technical drawing or sample component • Accurately drill precious metals so as to conform to any shape pre-determined by technical drawings or sample component • Transform basic jewellery components by means of abrasive techniques such as milling, grinding, filing a jour-sawing etc. so as to conform to any shape pre-determined by a technical drawing or sample component • Hammer, emboss, shape or dome precious metal sheet of an appropriate thickness into low relief, so as to conform to any shape pre-determined by a technical drawing or sample component using an appropriate doming tool 	
6	Manufacture of complex components and complete jewellery pieces using solder joints	20
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> • Various jewellery components and their uses • Range and use of techniques and methods for forming, constructing, and finishing components • Gemstone setting • Correct and safe use of solders and soldering torches 	

	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Assemble basic jewellery components into complex jewellery components by means of precious metal solder joints so as to conform to any design pre-determined by a technical drawing or sample component • Manufacture settings for precious gemstones so as to conform to any design pre-determined by a technical drawing or sample component, and so that stones of the pre-determined size and shape can be properly set by a professional gem setter • Manufacture functioning mechanisms for jewellery such as hinges, clasps, articulations, pressure snaps riveting and screw threads so as to conform to any design pre-determined by a technical drawing or sample component, or of their own conception and so that they will function as required and continue to function in the same way for an indefinite period of time with normal use • Assemble basic jewellery components and complex jewellery components into completed jewellery pieces by means of precious metal solder joints so as to conform to any design pre-determined by a technical drawing or sample component • Repair damaged or worn pieces of jewellery so that the restored piece will be indistinguishable from its original aspect at the time of manufacture 	
7	Surface finish	15
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> • Skill specific finishing and polishing methods and techniques • Effect of different types and grades of polishing media on the surface finish • Procedures, tools and techniques to gain the optimum surface finish • Common surface imperfections and defects and appropriate techniques for their repair • International grades of sandpaper used in surface finishing 	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> • Avoid creating marks, scratches and surface imperfections throughout all stages of manufacture of simple and complex jewellery components and completed jewellery pieces prior to the application of final surface finish • Finish surfaces at stages throughout the manufacturing process • Apply non-reflective 800ASA sandpaper (or equivalent) appropriate for critical evaluation and/or passing on to any subsequent phase of production requiring other goldsmith's industry skills, such as casting, gem-setting, engraving, and polishing 	
	Total	100

REFERENCES FOR INDUSTRY CONSULTATION

WorldSkills is committed to ensuring that the WorldSkills Standards Specifications fully reflect the dynamism of internationally recognized best practice in industry and business. To do this WorldSkills approaches a number of organizations across the world that can offer feedback on the draft Description of the Associated Role and WorldSkills Standards Specification on a two-yearly cycle.

In parallel to this, WSI consults three international occupational classifications and databases:

- ISCO-08: (<http://www.ilo.org/public/english/bureau/stat/isco/isco08/>)
- ESCO: (<https://ec.europa.eu/esco/portal/home>)
- O*NET OnLine (www.onetonline.org/)

This WSSS (Section 2) appears most closely to relate to the occupation of *Jeweller* (which is rather higher): <https://www.onetonline.org/link/summary/51-9071.01>

And the occupation of *Jeweller* here, which may be a closer fit:

<http://data.europa.eu/esco/occupation/618a854a-4ecd-4535-84e6-350e1fe0aa0f>

Adjacent occupations may also be explored through these links.