WorldSkills Standards Specification

Web Technologies

Information and Communication Technology

worldskills

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**	**6**
	The individual needs to know and understand: • Principles and practices that enable productive team work • The principles and behaviour of systems • The aspects of systems that contribute to sustainable products, strategies and practices • How to take initiatives and be enterprising in order to identify, analyse and evaluate information from a variety of sources • How to identify multiple solutions to a problem and offer them as options against time, budget, and other constraints. • How to use existing available tools to create proper solutions to a problem and requirement	
	The individual shall be able to: • Troubleshoot common web design and development problems • Take into account time limitations and deadlines • Debug and handle errors • Use a computer or a device and a range of software packages • Apply research techniques and skills to keep up-to-date with the latest industry guidelines • Plan each day's production schedule according to available time • Include linked images, fonts, native files and production file format when archiving • Use version control systems	
2	**Communication and interpersonal skills**	**6**
	The individual needs to know and understand: • How to solve communication problems including identifying the problem, research, analysis, solution generating, prototyping, user testing and outcome evaluation • Express design concepts by creating wire frames, and flowcharts • Software design concepts and techniques including flowchart and ER diagrams	
1	The individual shall be able to: • Read and understand specifications documents • Deliver a product that responds to client requirements and specification • Gather, analyse and evaluate information • Interpret standards and requirements • Match client requirements • Present a concept to meet business requirements	

3	WebsiteDesign	22
	The individual needs to know and understand: • How to follow design principles and patterns in order to produce aesthetically pleasing,creative, and accessible interfaces. • Issues related to the cognitive, social, cultural, accessible, technological and economic contexts for design • How to create and adapt graphics for the web • Different target markets and the elements of design which satisfy each market • Protocols for maintaining a corporate identity, brand and style guide • The limitations of Internet enabled devices and screen resolutions	
	The individual shall be able to: • Create, analyse, and develop visual response to communication problems, including understanding hierarchy, typography, aesthetics, and composition • Create and manipulate and optimize images for the internet • Identify the target market and create a concept for the design • Create responsive designs that function correctly on multiple screen resolutions and/or devices • Transform an idea into an aesthetically pleasing and creative design • Critique draft concepts, colour and typography choices • Create wireframes, prototypes and full user interfaces, considering user experience.	
4	Layout	22
	The individual needs to know and understand: • World Wide Web Consortium (W3C) standards for HTML and CSS • Positioning and layout methods • Usability and interaction design • Accessibility and communication for users with special needs • Cross browser compatibility • Multi device compatibility • Search Engine Optimization (SEO) and performance optimization • How to embed and integrate animations, audio and video where needed • World Wide Web Consortium (W3C) standards for WCAG	
	The individual shall be able to: • Create code that conforms and validates to the W3C standards including the accessibility guidelines • Create accessible and usable web interfaces for a variety of devices and screen resolutions • Use CSS or other external files to modify the appearance of the web interface • Use CSS pre/post-processors • Create and update web interfaces for user proper experience and to assist with search engine performance • Use CSS to develop animations and interactions to the user interface	

5	**Front-End Development**	22
	The individual needs to know and understand: • JavaScript • How to integrate libraries, frameworks and other systems or features with JavaScript • Use JavaScript pre/post processors and task running workflow	
	The individual shall be able to: • Create website animations and functionalities to assist in context explanations and adding visual appeal • Create and update JavaScript code to enhance a websites functionality, usability and aesthetics • Manipulate data and custom media with JavaScript • Create modular and reusable JavaScript code • Use of open source JavaScript libraries • Manipulate graphical elements using JavaScript	
6	**Back-End Development**	14
	The individual needs to know and understand: • Object-oriented PHP • Open Source server side Libraries and Frameworks • Connect to server through SSH to operate server-side libraries and frameworks. • How to design and implement databases with MySQL • FTP (File Transfer Protocol) server and client relationships and software packages. • How to manage data exchange between server and client systems • Software design patterns (E.g. MVC (Model View Controller)) • Web application security	
	The individual shall be able to: • Manipulate data making use of programming skills • Protect against security exploits • Integrate with existing code with API (Application Programming Interfaces), libraries and frameworks • Create or maintain database to support system requirements • Create code that is modular and reusable	
7	**Content Management Systems**	8
	The individual needs to know and understand: • Benefits and limitations of open source Content Management Systems • How to find, choose and implement suitable themes • How to find, choose and implement suitable plugins/modules • How to implement client side functionalities to CMS web sites • Understand the need for maintenance and updates to CMS plugins and modules for security	

	The individual shall be able to: • Install, configure and update Content Management Systems • Install, configure and update CMS plugins/modules • Use and modify open source theme starter to create theme for CMS • Create custom themes/templates for Content Management Systems • Create custom plugins/modules • Create custom widgets	
	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.**oneto**nline.org/)

Your competition appears most closely to relate to *Web Developer*:
https://www.onetonline.org/link/summary/15-1134.00
and/or *Web Developer*: http://data.europa.eu/esco/occupation/c40a2919-48a9-40ea-b506-1f34f693496d

Adjacent occupations ban also be explored through these links.