TECHNICAL DESCRIPTION

Web Design

TD17 v3.0 – WSC2011

WorldSkills International, by a resolution of the Technical Committee and in accordance with the Constitution, the Standing Orders and the Competition Rules, has adopted the following minimum requirements for this skill for the WorldSkills Competition.

The Technical Description consists of the following:

Effective 31.03.10

Liam Corcoran
Technical Committee Chair

1. INTRODUCTION

1.1 Name and description of skill

1.1.1 The name of the skill is Web Design.

1.1.2 Description of skill

Web Design is a fairly new profession incorporating building and maintaining web pages. Web Designers use computer programs to produce pages which include links to other pages, graphical elements, text and photographs. The layout of these elements can be presented as a script or drawings on paper. Computer software and open source libraries and frameworks is used for technical implementation. In their work, designers and builders must pay attention to copyright laws and ethical questions.

These days anybody can try their hand at Web Design, putting more pressure on professional designers. In order to awaken interest and make visitors stay at a site, designers must learn new techniques and use them to come up with original solutions. When professional rather than amateur sites pull in visitors, the Internet can become an important platform for corporate communications, marketing and trade.

A web page producer understands the technology and the related artistic values. On websites, technology is used to automate functions and to help content administrators in their work. Creative skills are needed when designing the colors, fonts and graphics and their layout on a site. User interface planning ensures good usability. A website producer must also understand the basics of project work, content production and site administration.

Compatibility of the end product with standard browsers and software/hardware combinations is important.

1.2 Scope of application

1.2.1 Every Expert and Competitor must know this Technical Description.

1.2.2 In the event of any conflict within the different languages of the Technical Descriptions, the English version takes precedence.

1.3 Associated documents

1.3.1 As this Technical Description contains only skill-specific information it must be used in association with the following:

- WSI - Competition Rules
- WSI - Competition Manual
- WSI - Online resources as indicated in this document
- Host Country - Health and Safety regulations

2. COMPETENCY AND SCOPE OF WORK

The Competition is a demonstration and assessment of the competencies associated with this skill. The Test Project consists of practical work only.

2.1 Competency specification

Animation and Video

The Competitor must know and understand:

- How to create animations, audio and video to web sites
- How to embed the created animations, audio and video to the site layout

The Competitor must be able to:

- Modify and optimize moving image(s) for web format
- Design an interface for moving image(s)
- Implement real-time streaming
- Create web animation for explanation and visual effect
- Include audio elements to create a more attractive / interactive website

Graphic Design

The Competitor must know and understand

- How to create graphic files, images and embody aesthetic values
- How to create a design from scratch using a provided brief
- Creative skills which are needed when designing the colors, typography and graphics of the site layout.
- How to specify the target audience
- How to use user centered design

The Competitor must be able to

- Plan a design concept, thumbnail, storyboard, flowchart etc.
- Import and edit images
- Optimize images for the web
- Create images with various graphic software applications
- Slice images with various graphic software applications
- Work inside a corporate identity
- Design and explain rational concept
- Create a color palette to suit the requirements needed
- Choose typography that enhances the design
- Design for different screen resolutions; design is optimized for a given resolution but may work on different resolutions and/or devices
- Create effective navigation which is intuitive to use
- Create page layout with: Flow of page; grid of page, whitespace, balance text – images, hierarchy

Server-side Programming with PHP and MySQL

The Competitor must know and understand

- How to do server side programming (PHP)
- How to design database (MySQL)

The Competitor must be able to

- Create and/or modify a server side application (Example CMS, web database)
- Use server side components (such as thumbnailing, ZIP files and PDF files)

Client –side Implementation with Open Source Libraries and Frameworks

The Competitor must know and understand:

- How to utilise coding with Open Source Libraries and Frameworks

The Competitor must be able to:

- Create parts of the client-side with Open Source Libraries and Frameworks

Presentation Layer Implementation
The Competitor must know and understand:
- How to make a consistent and persistent web site that follows the industry standards using the latest in design technology and coding

The Competitor must be able to:
- Design a web site using XML, JavaScript, Action Script, XHTML, Flex utilizing application software
- Use a CSS or other external file to modify the theme of the whole website
- Optimize web documents through two different browsers (latest stable versions)
- Create the web site in which the content stays consistent and well structured within various screen resolutions
- Create the web site which complies with the current W3C standards (http://www.w3.org)

Usability and Accessibility
The Competitor must know and understand:
- That Web accessibility means that people with disabilities can use the Web
- How to benefit different age groups with changing abilities
- Encompass all disabilities that affect access to the Web, including visual, auditory, physical, speech, cognitive, and neurological disabilities
- The way usability helps people to navigate around the web site
- How to create different templates for different devices

The Competitor must be able to:
- Maintain unity and consistency of the web site
- Create an easy-to-use navigation
- Create a web site in which information can be looked up easily
- Add accessibility to the website (for example, visually impaired people)

Problem Solving
The Competitor must know and understand:
- How to make a plan for solving a problem
- How to make a plan for testing the solution

The Competitor must be able to:
- Solve the problem as quick as possible
- Create the solution with provided tools
- Test that the solution is working properly

2.2 Theoretical knowledge

2.2.1 Theoretical knowledge is required but not tested explicitly.

2.2.2 Knowledge of rules and regulations is not examined.

2.3 Practical work

The web sites are created very often in the following order:
- planning
- creating elements for the web site
- client side coding
- server side programming

In some cases the order is different. The reason for that might be that there are some parts already done by someone else (for example the database is ready).

Testing is an ongoing task in every phase.

3. THE TEST PROJECT

3.1 Format / structure of the Test Project

The format of the Test Project is modular with separately assessed standalone subprojects.

The Test Project consists of two parts:

- The major project, with a topic related to the Host Country – is broken down into modules to be completed each day
- A surprise project, which will be chosen during competition preparation.

3.2 Test Project design requirements

Test Project modules are to be developed within the assessment framework given in subsection 5.1 Assessment criteria.

Experts with Special Responsibility (ESR) lead other Experts through the development of the Test Project modules which are disclosed at the Competition. The Chief Expert and the Deputy Chief Expert choose 4 ESRs as soon as they have the information of the participating countries' Experts.

There are no further design requirements for the Test Project.

3.3 Test Project development

The Test Project MUST be submitted using the templates provided by WorldSkills International (http://www.worldskills.org/competitionpreparation). Use the Word template for text documents and DWG template for drawings.

3.3.1 Who develops the Test Project / modules

The Test Project / modules are developed by all Experts.

The four modules are developed by four separate Expert groups. Each group creates one module. Each group is lead by one ESR.

3.3.2 How and where is the Test Project / modules developed

The Test Project / modules are developed by the four Expert groups on the Discussion Forum.

3.3.3 When is the Test Project developed

The Test Project is developed by 6 months before the current Competition.

The first versions of the modules should be ready and sent to the forum 6 months before the Competition. The circulated versions of the modules should be ready and sent to the WorldSkills Secretariat for circulation on the website 3 months before the Competition. The Test Project modules will be changed 30% at the Competition.

3.4 Test Project marking scheme

Each Test Project must be accompanied by a marking scheme proposal based on the assessment criteria defined in Section 5.

3.4.1 The marking scheme proposal is developed by the person(s) developing the Test Project. The detailed and final marking scheme is developed and agreed by all Experts at the Competition.

3.4.2 Marking schemes should be entered into the CIS prior to the Competition.

3.5 Test Project validation

It must be demonstrated that the Test Project/modules can be completed within the material, equipment, knowledge and time constraints. This will this be demonstrated by the Chief Expert.

3.6 Test Project selection
The Test Project is selected by vote of the Experts at the current Competition according to the participation of Experts as documented in the Competition Rules.

3.7 Test Project circulation
The Test Project is circulated via WorldSkills International website 3 months before the current Competition.

3.8 Test Project coordination (preparation for Competition)
Coordination of the Test Project will be undertaken by the Chief Expert, Deputy Chief Expert and the Workshop Supervisor.

The gathering of project data shall be the responsibility of the Deputy Chief Expert and should be forwarded to the Workshop supervisor 1 month prior to the Competition.

As soon as the host country Workshop supervisor has been selected they will be invited by the Deputy Chief Expert to participate in the online discussion at http://www.worldskills.org/members/forums/forum_17/index.php.

3.9 Test Project change at the Competition
Each of the four module development groups make changes to the modules they are responsible for. The 30% change can be for example: remove one of the tasks in the module, change the provided materials of the task, make a new version of one of the tasks or add an extra task to the module. When the 30% change has been made, a vote by the Experts to choose the final Test Project will be conducted according to the participation of Experts as documented in the Competition Rules.

3.10 Material or manufacturer specifications
Each module development group creates the materials which are needed in the modules in the module.

4. SKILL MANAGEMENT AND COMMUNICATION

4.1 Discussion Forum
Prior to the Competition, all discussion, communication, collaboration and decision making regarding the skill must take place on the skill-specific Discussion Forum (http://www.worldskills.org/forums). All skill-related decisions and communication are only valid if they take place on the forum. The Chief Expert (or an Expert nominated by the Chief Expert) will be moderator for this forum. Refer to Competition Rules for the timeline of communication and competition development requirements.

4.2 Competitor information
All information for registered Competitors is available from the Competitor Centre (http://www.worldskills.org/Competitorcentre).

This information includes:
- Competition Rules
- Technical Descriptions
- Test Projects
- Other Competition-related information

Prior to the start of the Competition, each Competitor will receive a detailed timetable reflecting the timing for completion of the Test Project tasks, sections or modules.

All web publishing guidelines relating to the task will be supplied to the Competitor at the same time as the Test Project.

4.3 Test Projects

Circulated Test Projects will be available from worldskills.org (http://www.worldskills.org/testprojects) and the Competitor Centre (http://www.worldskills.org/Competitorcentre).

4.4 Day-to-day management

The day-to-day management is defined in the Skill Management Plan that is created by the Skill Management Team led by the Chief Expert. The Skill Management Team comprises the Jury President, Chief Expert and Deputy Chief Expert. The Skill Management Plan is progressively developed in the six months prior to the Competition and finalised at the Competition (agreed by Experts and submitted to the Chair/Vice Chair of the Technical Committee). The Chief Expert is to regularly share updates of the Skill Management Plan via the Forum.

5. ASSESSMENT

This section describes how the Experts will assess the Test Project / modules. It also specifies the assessment specifications and procedures and requirements for marking.

5.1 Assessment criteria

This section defines the assessment criteria and the number of marks (subjective and objective) awarded. The total number of marks for all assessment criteria must be 100.

Section	Criterion	Marks		
		Subjective (if applicable)	Objective	Total
A	Animation and video	7	3	**10**
B	Graphic Design	17	5	**22**
C	Server-side programming with PHP and MySQL	0	25	**25**
D	Client-side implementation of open source libraries and frames	0	10	**10**
E	Presentation layer implementation	0	15	**15**
F	Usability and accessibility	5	3	**8**
G	Problem solving	5	5	**10**
H				
	Total =	**34**	**66**	**100**

5.2 Subjective marking

Scores are awarded on a scale of 1 to 10**.**

5.3 Skill assessment specification

There are to be 4 marking groups. Each group will decide the marking criteria of one module and also the dimensional tolerances on Objective Marking Forms.

There are to be a minimum of 10 and a maximum of 60 aspects of criterion in one module. Competitors will be given all the necessary materials prior to the commencement of each module. It is the responsibility of the Competitor to check the material supplied against the module material list, which will have been previously checked and signed by two Experts.
Criteria for objective marking

There can be three different types of objective criteria in the Test Project. In the table below is the explanation of the types.

Type	Example	Maximum points	Correct	Not correct
Full or zero points.	Site Map dynamically linked to menu	0.50	0.50	0
Deduct from full points.	Code validate to XHTML 1.0 Strict [deduct 0.5 mark for each type of error]	2.00	2.00	0 – 1.5
Add to zero point.	CSS documentation (0.5) XHTML documentation (0.5)	1.0	1.0	0 – 0.5

5.4 Skill assessment procedures

- Experts should have the opportunity to allocate marks in an equal percentage with a margin of 5 %.
- The Experts that attend the Competition will be divided into marking groups.
- Experts should be divided in to marking team as much as possible allocating equal objective and subjective marking.
- Experts should be divided as much as possible in to different cultural groups for subjective marking.
- The Test Project will be modular in design and modules will be judged when they are completed.

6. SKILL-SPECIFIC SAFETY REQUIREMENTS

Refer to Host Country Health & Safety documentation for Host Country regulations.

- It is recommended that the Competitors take frequent breaks from viewing the computer monitor to relax their eyes.
- It is also recommended that the Competitor request an ergonomic keyboard if they have carpel tunnel syndrome.

7. MATERIALS & EQUIPMENT

7.1 Infrastructure List

The Infrastructure List lists all equipment, materials and facilities provided by the Host Country.

The Infrastructure List is online (http://www.worldskills.org/infrastructure/).

The Infrastructure List specifies the items & quantities requested by the Experts for the next Competition. The Host Country will progressively update the Infrastructure List specifying the actual quantity, type, brand/model of the items. Host Country supplied items are shown in a separate column.

At each Competition, the Experts must review and update the Infrastructure List in preparation for the next Competition. Experts must advise the Technical Director of any increases in space and/or equipment.

At each Competition, the Technical Observer must audit the Infrastructure List that was used at that Competition.

The Infrastructure List does not include items that Competitors and/or Experts are required to bring and items that Competitors are not allowed to bring – they are specified below.

7.2 Materials, equipment and tools supplied by Competitors in their toolbox

- Competitor may bring drawing materials
- Competitor may bring keyboard in desired language. Note: If the keyboard brought by the Competitor does not work then a standard keyboard will be provided by the Host Country.
- Language file for Microsoft OS to make the keyboard work correctly
- Mouse
- Drawing tablet
- Headset
- Original music CDs
- All materials brought in by the Competitors must not have any internal memory storage devices. The Web Design Experts hold the right to disallow certain equipment brought by Competitors.

7.3 Materials, equipment and tools supplied by Experts

Not applicable

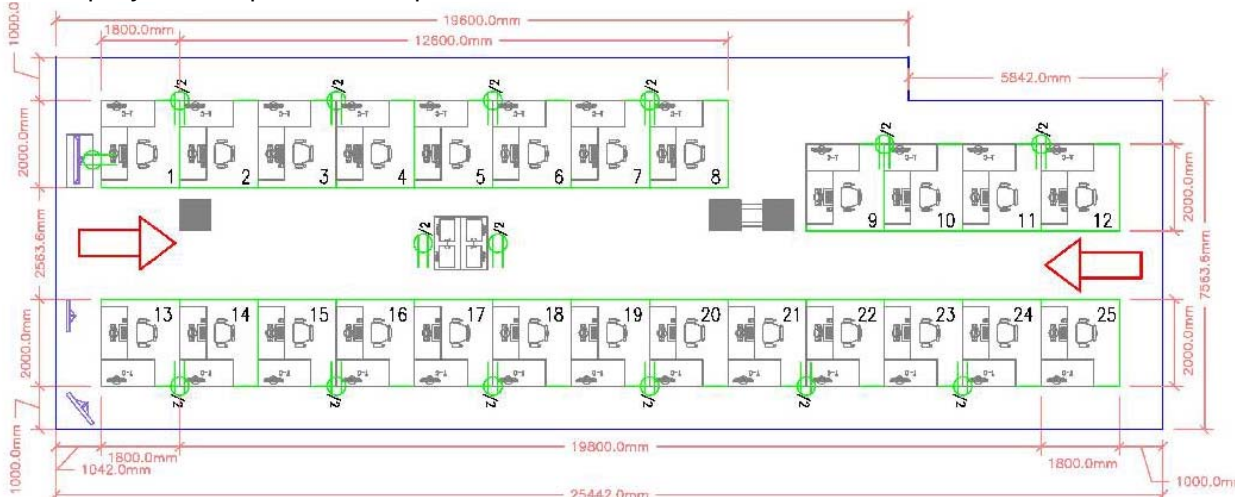
7.4 Materials & equipment prohibited in the skill area

- Extra software
- Mobile phones
- PDAs
- Memory sticks (data carriers)
- Equipment must not have any internal memory storage devices.
- The Web Design Experts hold the right to disallow certain equipment brought into the Competition.

7.5 Sample workshop layouts

Workshop layouts from Calgary are available at:
http://www.worldskills.org/index.php?option=com_halls&Itemid=540

Workshop layout from previous Competition:



8. MARKETING THE SKILL TO VISITORS AND MEDIA

8.1 Maximising visitor and media engagement

- As part of the Test Project the Competitor will be required to make presentations to the audience. The Competitor can get 1 mark for presentation of the skill to the audience per one day. The mark is objective.
- Try a trade
- Display screens showing a combination of Competitor profile and screen capture of current work
- Test Project descriptions
- Enhanced understanding of Competitor activity
- Career opportunities

8.2 Sustainability

- Recycling
- Use of 'green' materials
- Use of completed Test Projects after Competition
- No printers on Competition floor therefore less paper
- Limit the amount of programs, no unused programs installed on the Computers