6 Web Accessibility

Module Goals:

The module requires the candidates to have fundamental knowledge of the topic "Web Accessibility", that means knowledge of the accessibility of the web for people with special needs and the elderly.
The candidates shall understand the problems and needs of the target groups regarding access to the Web and they shall know which technical assistive tools these people use in their work with the computer. They shall be familiar with the most important guidelines and legal aspects of the topic Web accessibility and have basic knowledge of the way information ought to be edited to make it accessible for as many persons as possible. Furthermore the candidates shall show competence in applying various methods and techniques to implement the above guidelines. Last but not least, they shall have an understanding of the evaluation of Web appearances regarding accessibility.

Prerequisites:

Module 2: Web Content Design (HTML&CSS)

6.1 Sensitization and Introduction

6.1.1 Blind People

6.1.1.1 Understand and explain the problems and needs of accessing the Web for the blind

6.1.1.2 Know structure of Braille system

6.1.1.3 Understand and explain how a screen reader works

6.1.1.4 Understand and explain how Braille display works

6.1.1.5 Know the principles and possibilities of voice output communication aids

6.1.2 People with Low Vision

6.1.2.1 Know different types of visual impairment

6.1.2.2 Understand and explain the problems and needs of accessing the Web for people with low vision

6.1.2.3 Know support possibilities by choosing appropriate settings provided for in the operating system Windows

6.1.2.4 Be familiar with enlargement software

6.1.3 People with Motor Disabilities

6.1.3.1 Understand and explain the problems and needs of accessing the Web for people with motor disabilities

6.1.3.2 Know alternative input devices (e.g. mouth stick, alternative keyboards, feeler, puff and sip device/head mouse)

6.1.4 Hard of Hearing or Deaf People

6.1.4.1 Understand and explain the problems and needs of accessing the Web for people who are hard of hearing or deaf

6.1.4.2 Know the principles of sign language

6.1.5 People with Cognitive Disabilities and People with Learning Disabilities

6.1.5.1 Know different types of cognitive disabilities and learning disabilities

6.1.5.2 Understand and explain the problems and needs of accessing the Web for people with cognitive or learning disabilities

6.1.6 Elderly People

6.1.6.1 Understand and explain the problems and needs of accessing the Web for elderly people, which result from a combination of different types of impairment appearing in a mitigated form

6.1.7 Arguments for Accessibility

6.1.7.1 Understand the social importance

6.1.7.2 Understand and explain the economic and socio-economic reasons (e. g. demographic development, statistical data)

6.1.7.3 Understand and explain the business aspects (e. g. easier maintenance, search engine friendliness, size of the target group)

6.1.7.4 Be aware of political and legal reasons

6.2 Guidelines and Laws

6.2.1 European Directives

6.2.1.1 Know the most important European directives which contain aspects of Web accessibility (e. g. Action Plan “eEurope 2002”, Action Plan “eEurope 2005”, Directive “i2010“, Resolution of the Council of Europe on the topic “eAccessibility“)

6.2.2 National Laws

6.2.2.1 Understand and explain the most important aspects of national laws (e. g. in Austria: Federal Constitution Art. 7, Federal Law for the legal equality of disabled persons, eGovernment law)

6.2.3 Laws in Other European Countries

6.2.3.1 Know the most important legal provisions of other European countries

6.2.4 Guidelines

6.2.4.1 Know the structure and contents of the Web Content Accessibility Guidelines in its recommended version and its latest drafts

6.2.4.2 Know the guidelines of Section 508 of the Americans with Disabilities Act (ADA)

6.2.4.3 Be familiar with the contents of other W3C guidelines (Authoring Tool Accessibility Guidelines, User Agent Accessibility Guidelines)

6.3 Information Design

6.3.1 Fundamentals and Terms

6.3.1.1 Know different ways of reading

6.3.1.2 Assess the readability of texts (print and screen)

6.3.1.3 Know the most important terms of typography (e. g. font type, font size, font style, font stretch)

6.3.2 Gestalt Psychology

6.3.2.1 Understand the most important Gestalt laws (e. g. Proximity, Closure, Similarity, Continuity, Symmetry, Common Fate)

6.3.2.2 Understand the effect of colour

6.3.2.3 Structure the page in different areas (determine type area)

6.3.3 Simple Language

6.3.3.1 Understand the principles of “simple language” and “easy readability” and know about developments in these fields

6.3.3.2 Know the “easy readability” guidelines for printed documents

6.3.3.3 Know the “easy readability” guidelines for Web documents

6.3.4 Editing of Documents/ Accessibility of Documents

6.3.4.1 Understand and explain the possibilities of markup in word processing documents

6.3.4.2 Understand the possibilities of later markup in PDF documents

6.4 Methods and Techniques for the Implementation of Web Accessibility

6.4.1 Basic Document Properties

6.4.1.1 Select correctly the HTML variation used (doctype)

6.4.1.2 Select correctly the title of the Web page (Element title)

6.4.1.3 Understand the importance of metadata and provide them appropriately

6.4.1.4 Identify the primary language of the document

6.4.2 Layout

6.4.2.1 Define the logic areas of a page (Element div) and position them with CSS (properties float, position)

6.4.2.2 Understand and explain the advantage of positioning with CSS

6.4.2.3 Understand the advantage of size values in relative units of measurement

6.4.2.4 Use relative units of measurement to create a completely scaled layout

6.4.3 Navigation

6.4.3.1 Design navigation as linear structure (one navigation level)

6.4.3.2 Design navigation as nested structure (several navigation levels)

6.4.3.3 Provide jump links on top of each page

6.4.3.4 Provide a table of contents or a sitemap

6.4.3.5 Use logic tab index sequence

6.4.4 Structuring

6.4.4.1 Mark headlines correctly (elements h1-h6)

6.4.4.2 Use lists correctly (elements ul, ol, dl)

6.4.4.3 Use quotations correctly (elements q, blockquote, cite)

6.4.5 Graphic Images/ Non-text Elements

6.4.5.1 Understand and explain the importance of alternative equivalents

6.4.5.2 Position correctly alternative equivalents for graphic images that transport content

6.4.5.3 Position correctly alternative equivalents for purely decorative graphic images and spacer images (empty alt attribute)

6.4.5.4 Position correctly alternative equivalents for graphic images that serve as a links

6.4.5.5 Write long descriptions for significant graphic images (attribute longdesc)

6.4.6 Frames

6.4.6.1 Add titles to frames (attribute title)

6.4.6.2 Explain structure and connection between frames for more complex frame constructs

6.4.7 Data tables

6.4.7.1 Mark headers of lines and rows correctly (element th)

6.4.7.2 Provide summary of table content (summary attribute)

6.4.7.3 Place reference of headers to table cells correctly (attribute headers, axis)

6.4.8 Forms

6.4.8.1 Carry out grouping of logical groups with the elements fieldset and legend

6.4.8.2 Use and position label element correctly

6.4.8.3 Mark compulsory fields correctly

6.4.8.4 Position help text for the form fields suitably

6.4.8.5 Add suitable text for initial selection to form inputs

6.4.9 Links

6.4.9.1 Mark links correctly which open in a new window

6.4.9.2 Clearly identify link texts

6.4.10 Access keys

6.4.10.1 Mark access keys correctly (attribute accesskey)

6.4.10.2 Understand and explain the problems of using letters as access keys

6.4.11 Abbreviations, Acronyms and Foreign Languages

6.4.11.1 Mark change in language correctly

6.4.11.2 Mark abbreviations correctly (element abbr)

6.4.11.3 Mark acronyms correctly (element acronym)

6.4.12 Colours and Contrasts

6.4.12.1 Select correct colour combinations (e. g. sufficient contrast, avoid red-green combinations)

6.4.12.2 Present content in a way that all information is conveyed even without colour information

6.4.12.3 Understand how the choice of colour can be left to the user

6.4.13 Multimedia and Accessibility

6.4.13.1 Generate text equivalent for multimedia (text transcripts for audio and subtitles for video)

6.4.13.2 Guarantee accessibility via keyboard (e. g. buttons and links)

6.4.13.3 Set logically the tab sequence within the buttons and links

6.4.14 Client-side Scripting and Accessibility

6.4.14.1 Understand the principle of equipment independence and be able to use it in connection with scripts

6.4.14.2 Design dynamic content fully accessible

6.4.14.3 Design programmed functions, which are used as GUI extensions, fully accessible

6.4.14.4 Offer a site version without Javascript (pure text version or fully adequate alternative in noscript elements)

6.5 Evaluation

6.5.1 Model of Procedure

6.5.1.1 Understand the procedure of evaluating a site

6.5.1.2 Choose suitable pages within the site

6.5.1.3 Write a structured report

6.5.2 Validation

6.5.2.1 Understand why writing valid code is necessary as the basis for good accessibility

6.5.2.2 Know and use HTML validators

6.5.2.3 Know and use CSS validator

6.5.3 Evaluation Tools

6.5.3.1 Know and use various tools (e. g. Web Accessibility Toolbar, Web Developer Toolbar, WebXAct, WAVE, Hermish, Total Validator)

6.5.3.2 Use assistive technologies as evaluation tools (e. g. JAWS for Windows, WebFormator)

6.5.3.3 Understand the field of application of tools

6.5.3.4 Understand the strengths and weaknesses of automatic tools

6.5.3.5 Show limitation of tools

6.5.3.6 Show aspects that make manual evaluation a necessity