

Course  
**CMP-5079-3**  
Creating Web Documents

Computer Science





## INTRODUCTION

The goal of the *Creating Web Documents* course is to provide adult learners with the means to create Web pages and Web sites in order to disseminate content or ideas on the Internet.

In this course, adult learners deal with various learning situations that help them acquire practical knowledge about Web document creation. By creating Web pages and Web sites, adult learners understand the objective of a task and mobilize the necessary resources. They communicate using computer resources and respect the codes and conventions of the language used. In their interactions, they validate the information exchanged in order to get an accurate sense of their approach and results.

By the end of this course, adult learners will be able to design formatted documents in a language that can be interpreted by different browsers and whose content can be consulted by Web users. They will understand the different structural elements of an HTML page, including tags, syntax, style sheets and the insertion of objects such as images. They will know how to use a code generator and a text editor. They will understand and apply the standards associated with Web-based documents and Web site document management, and will be able to plan their work.

## SUBJECT-SPECIFIC COMPETENCIES

This course targets the following subject-specific competencies:

- *Interacts in a computer environment*
- *Produces computerized documents*
- *Adopts behaviours that reflect a concern for ethics, safety and critical thinking*

Thus, it is by activating and integrating all three subject-specific competencies and by using other resources that adults are able to effectively structure their learning.

During the learning situations, adult learners use the elements of a computer environment. They carefully plan their work and adapt their plan as they work. As they carry out a project and upon its completion, they evaluate their efficiency and make any necessary adjustments to their approach, while adopting ethical and safe behaviours.

## PROCESSES AND STRATEGIES

As they learn about computers, adult learners are called upon to use various processes and strategies. These processes and strategies represent the way in which adults go about solving problems, meeting challenges and, in general, carrying out their learning activities.

For the *Creating Web Documents* course, the suggested approach is the production process.

Production process	
<ul style="list-style-type: none"> <li>• This process consists of two steps: planning and production. Four values are associated with it: communicate clearly; validate the production on a regular basis; maintain ongoing feedback and collaboration; accept the change.</li> <li>• During the planning stage, adult learners must define the work to be done as precisely as possible. Planning must be flexible and allow adjustments throughout the project.</li> <li>• During the production stage, adult learners must complete the project according to the planning established; maintain ongoing feedback and collaboration; accept change, even at the end of the production stage, and respond to change rather than following the initial plan.</li> </ul>	
<p><b>Examples of strategies</b></p>	<ul style="list-style-type: none"> <li>- Comparing the current situation with the desired situation</li> <li>- Determining the steps involved in carrying out the work</li> <li>- Drawing up a work schedule</li> <li>- Choosing a work method</li> <li>- Making adjustments to the plan as they work</li> <li>- Analyzing their results</li> </ul>

To meet the requirements of the production process, the initial plan must be flexible enough to allow for adjustments throughout the project. Through discussions with the teacher or with their peers, adults learn to reflect on each step in their process and arrive at a result that will differ from their original plan. By applying the above process, they learn to cooperate with others and to accept changes during the course of a project.

## CROSS-CURRICULAR COMPETENCIES

The cross-curricular competencies are not developed in a vacuum; they are rooted in learning situations and contribute, to varying degrees, to the development of the subject-specific competencies, and vice versa.

Several cross-curricular competencies can be useful in dealing with the learning situations in the *Creating Web Documents* course. Two are considered particularly relevant to this course: *Adopts effective work methods* and *Communicates appropriately*.

### ▪ **Methodological Competency**

When producing Web-based documents, adults learn to *adopt effective work methods*. Script editing implies complying with specific standards, while handling a large number of files requires using a clear filing and naming system. When creating Web pages, adult learners must be able plan and monitor their work.

- **Communication-Related Competency**

Web sites are of little interest if they are not based on a communication intention. When creating Web-based documents, adults learn to *communicate appropriately*, taking into account the means at their disposal, the target audiences and the messages to convey.

## SUBJECT-SPECIFIC CONTENT

The subject-specific content consists of knowledge and cultural references. The prescribed content for this course is outlined below. However, depending on the context (e.g. if certain tools or functions are not available in a given software program), other equivalent content may be substituted for that outlined below.

## KNOWLEDGE

- ***Main types of editors***

- Web editor
  - Display mode: source mode (code generator)
  - Display mode: WYSIWYG
- Raw text editor (without formatting or styles)
- Online editor

- ***Main characteristics of scripts for the Web***

- Mark-up languages (HTML, XML, XHTML)
- Cascading style sheets (CSS)
- Programming languages (JavaScript, ActionScript)
- Combinations of languages (DHTML, AJAX)
- Mark-up language syntax
  - Document structure
  - Tags
  - Elements
  - Event handlers (onclick, onmouseover, onmouseout)
- CSS syntax
  - Selector
  - Rule blocks {property: value;}
- Basics of Web browsing
  - Hypertext links
  - Internet addresses (URL)

- Anchors (bookmarks)
- **Display sizes of output devices**
  - Computer monitors (definitions: SVGA, XGA, HD, etc.)
  - Smart phones
  - Tablets
- **Interface ergonomics**
  - ISO 9241-210
  - Architecture
  - Colour code chart
- **Images**
  - Computer graphics software
  - Stock images
  - Formats (PNG, JPG, GIF)
  - Optimization (size, resolution, compression)
- **Standard terminology associated with mark-up languages and the Internet**
- **Preparing images**
  - Creating or modifying images to be used in Web pages
  - Optimizing images for the Web
- **Web site file management**
  - Organizing files in folders according to a logical structure
  - Following standards for naming files and folders
- **Using a code generator or raw text editor**
  - Using tags and tag attributes to format a document
    - Document header
    - META tags
    - Document body
    - Paragraphs, headings, characters
    - Images
    - Comments
  - Creating hypertext links to Web resources

- Internal hypertext links
- External hypertext links
- Browsing menu
- Layout of elements
  - Table
  - DIV tags (relative and absolute values)
- Formatting a document using style sheets
  - Links to an external style sheet
  - Creating internal styles
- Using external resources
  - Inserting JavaScript
  - Inserting an existing DHTML or AJAX code
  - Linking an image, animation, video or widget from another Web site
- ***Validating a Web site using a validation tool (software or online)***
- ***Uploading a Web site to a Web server***
  - Using file transfer mode (FTP or Web hosting control panel)
  - Updating documents on a Web site

## CULTURAL REFERENCES

The following cultural references will help adults understand some of the factors that influenced the development of computer science. These references give a cultural dimension to instruction, expand the adult learners' knowledge and make their learning meaningful. The teacher, with input from adult learners, may choose other references that are more appropriate to the task at hand.

- ***Events and chronology***
  - Evolution of HTML (1, 2, 3, 4, 5, etc.)
  - Evolution of the Web (1.0, 2.0, 3.0, etc.)
  - Table illustrating the development of the Internet
  - Transmission of information before the Internet
- ***Heritage objects***
  - 14.4 Kbps modem and fibre optics
  - Obsolete Web sites
  - Types of mass media
  - Photo albums and social networks

- **Regional or national references**

- Québec Web design firms
- Anecdotes
- School-related elements

## FAMILIES OF LEARNING SITUATIONS

The goal of the *Creating Web Documents* course is to provide adult learners with the means to create Web pages and Web sites in order to disseminate content or ideas on the Internet. This course gives adult learners the opportunity to perform actions that will enable them to interact in a computer environment, produce quality computerized documents and adopt ethical behaviours.

The shaded cells in the table below provide specifics about the contexts in which the prescribed families of learning situations are applied in this course.

Subject-specific competencies	Families of learning situations related to . . .		
	Information	Creation	Critical thinking
<b>Interacts in a computer environment</b>	Interacts by interpreting signals he/she receives and using input and output peripherals	Discovers what computers can do by consulting documentation and by experimenting	Critically examines computerized communication tools by applying evaluation criteria
<b>Produces computerized documents</b>	Communicates by using computerized services	Creates by correctly using the appropriate functions	Evaluates his/her work by setting quality standards
<b>Adopts behaviours that reflect a concern for ethics, safety and critical thinking</b>	Communicates respectfully, using the conventions of a given medium	Acts prudently by adopting safe behaviours	Validates information by using validation criteria

First, adult learners interact by interpreting signals that they receive and by using input and output peripherals, in particular to take action.

Then, they communicate using computerized services, in order to share their experiences and ideas and to express themselves. They create documents by correctly using the appropriate functions and thus work more efficiently. They communicate respectfully, using the conventions of a given medium.



## **BROAD AREAS OF LEARNING**

The broad areas of learning deal with major contemporary issues. Ideally, the situations to be studied should be selected in keeping with the educational aims of the broad areas of learning since these areas of learning provide a broader context for the learning situations and thus serve to make learning more meaningful. Two broad areas of learning are considered particularly relevant to this course: Media Literacy, and Citizenship and Community Life.

- **Media Literacy**

Being able to better understand how media information is processed is one of the aims of the Computer Science program. A learning activity that allows adult learners to be aware of problems related to the Internet and data security and confidentiality meets the educational aim of the BAL Media Literacy.

- **Citizenship and Community Life**

The Computer Science program gives adult learners the opportunity to experience the principles that are the basis of equal rights in our society. A learning situation that makes adult learners aware of ethical problems related to the Internet and its use meets the educational aim of the BAL Citizenship and Community Life.

## **EXAMPLE OF A LEARNING SITUATION**

All learning situations, no matter what broad area of learning is targeted, place adult learners at the heart of the action. Learning situations promote the development of subject-specific and cross-curricular competencies, the acquisition of computer knowledge and skills and the mobilization of various resources that are useful in carrying out the tasks at hand.

The table below shows the elements that need to be considered when developing a learning situation and highlights those selected for the learning activity described on the following page.

ELEMENTS REQUIRED IN LEARNING SITUATIONS	
<b>Broad area of learning</b> (targeted) - Contextualizes learning to make learning more meaningful	<ul style="list-style-type: none"> <li>• Media Literacy</li> </ul>
<b>Subject-specific competencies</b> (prescribed) - Are developed in action and require the active participation of adult learners	<ul style="list-style-type: none"> <li>• Interacts in a computer environment</li> <li>• Produces computerized documents</li> <li>• Adopts behaviours that reflect a concern for ethics, safety and critical thinking</li> </ul>
<b>Families of learning situations</b> (prescribed) - Group together situations appropriate to the course, based on issues drawn from reality - Promote the acquisition of computer knowledge and skills	<ul style="list-style-type: none"> <li>• <b>Information</b> <ul style="list-style-type: none"> <li>○ Interacts by interpreting signals he/she receives and using input and output peripherals</li> <li>○ Communicates by using computerized services</li> <li>○ Communicates respectfully, using the conventions of a given medium</li> </ul> </li> <li>• <b>Creation</b> <ul style="list-style-type: none"> <li>○ Creates by correctly using the appropriate functions</li> </ul> </li> </ul>
<b>Cross-curricular competencies</b> (targeted) - Are developed in context together with the subject-specific competencies	<ul style="list-style-type: none"> <li>• Adopts effective work methods</li> <li>• Communicates appropriately</li> </ul>
<b>Knowledge</b> (prescribed) - Includes computer knowledge and skills that adult learners must acquire in the course	<ul style="list-style-type: none"> <li>• Main characteristics of scripts for the Web</li> <li>• Interface ergonomics</li> <li>• Formatting documents using style sheets by interpreting signals that they receive and using input and output peripherals</li> <li>• Using external resources</li> <li>• Uploading a Web site to a Web server</li> </ul>

This section provides an example of a learning activity. It includes a context that serves as a common thread throughout the activity; however, it is not formally spelled out. Although they may not be explicit, the learning situation includes the elements identified in the table above: the broad area of learning, the subject-specific competencies, the families of learning situations, the cross-curricular competencies and the prescribed knowledge. To promote learning, these elements must be structured in a coherent and meaningful way.

Teachers can target any element as a focus of learning, be it actions related to the subject-specific or the cross-curricular competencies or the prescribed knowledge that adults must acquire.

## EXAMPLE OF A LEARNING SITUATION

### Class blog

**Task:** Add a blog to the class Web site where students can hold discussions with their classmates and the teacher and get help with homework.

To start off the activity, adult learners identify the type of mark-up language of the Web site to be modified. They search the Internet for scripts, widgets or blogs they could incorporate into the class Web site. Once they have chosen the ones they want to add to their site, they make sure they have the right to do so.

To carry out the activity, adult learners modify a Web page so that it is technically and aesthetically possible to integrate the object. If necessary, they adapt the corresponding style sheet and make the required changes to the object. Throughout the project, they consult help resources and check both their approach and their results.

At the end of the activity, adult learners present their blog to their teacher and classmates. Using their blog as a means of communication, they discuss and evaluate the effectiveness of their new communication tool and think of different uses for their blog.

### END-OF-COURSE OUTCOMES

To deal with situations related to the creation of Web documents, adult learners identify and use the required commands and functions. To do this, they use the following subject-specific competencies: *Interacts in a computer environment*, *Produces computerized documents* and *Adopts behaviours that reflect a concern for ethics, safety and critical thinking*.

When adult learners *create* a Web document, they plan their work by becoming familiar with the objective of the task and evaluating its complexity. As they carry out their work, they choose a solution, mobilize the necessary resources, and make adjustments as needed. At this stage, they correctly use the appropriate commands and functions and become more versatile.

When adult learners *interact*, they write code using the appropriate language and interpret messages from the code generator or text editor. They check whether they have attained the communication objective and the quality standards that have been set by going over the steps they followed. This helps them get an accurate sense of their results and identify other contexts in which their approach could be applied.

When adult learners *communicate*, they use computer resources to disseminate ideas and content. They determine the available resources and consider the best way to proceed. They take into account factors that can help or hinder communication. They respect the rules, codes and conventions of the various computer languages they are called upon to use.

Throughout the learning process, adult learners develop competence in the following computer knowledge and skills: they use the main characteristics of scripts for the Web, plan a Web site based on the display size of the output devices, create or modify images and optimize them for the Web, create a Web site by applying interface ergonomic standards, and manage documents appropriately. They validate their work and upload it to an appropriate Web space. In addition, they do not hesitate to consult various resources to obtain help when difficulties arise.

## **EVALUATION CRITERIA**

### ***Interacts in a computer environment***

- Accurate interpretation of messages and signals

### ***Produces computerized documents***

- Thorough planning of the work
- Appropriate formatting based on document type
- Application of appropriate tools and functions
- Proper presentation of the information based on the context

### ***Adopts behaviours that reflect a concern for ethics, safety and critical thinking***

- Adequate communication using the conventions of a given medium