VITELS

Didactics and Design Guide

Version 1.9

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2 Introduction

This guide is a cookbook like compilation of the full didactical concept. It is a mix of necessary background information, formatting information and implementation information. VITELS, the Virtual Internet and Telecommunications Laboratory of Switzerland, also focuses on educating and training computer scientists, engineers and information technology specialists. Thus, a series of e-learning modules had to be produced, all of them teaching important concepts in the area of the Internet. The result is a hands-on sessions' orientated course frame work. A peculiarity of the VITELS course is the modular structure with many course modules brought together by many partners. The course is presented on a common web course platform.

Figure 1 shows the VITELS course structure. Within the VITELS course, several course modules form the didactical in itself closed learning units. Each of the learning units is sub divided in four chapters.



Figure 1: The VITELS course structure.

The global introduction and the general students' resources comprise general background information of the course and information necessary for all the modules.

Although the VITELS course modules have different origins they must be identically structured and designed, appear in a common look and feel. This guide

helps VITELS module designers in their work making a unique and interesting course.

This document is subdivided into a didactical and into a design part. The didactical part explains the course structure, why certain chapters were chosen and also provides concrete implementation rules. The design part explains the optical design, the page layout and mechanisms to reach them as well as the course platform settings.

Students have the possibility to work through the course modules in a proposed order or choose those modules that are required by their curriculum.

To ease the understanding of this document, we used multiple colors and styles for formatting text:

Most sections are introduced with the goals denoted in blue bold italic letters.

Mandatory web pages that are a part of the course are introduced with blue bold letters.

Mandatory sections are introduced with green bold letters.

Text that is included automatically by the design tool is denoted in orange.

Special settings for WebCT, the course platform are denoted in red.

This guide was originally developed for the Virtual Internet and Telecommunications Laboratory of Switzerland, further developed for the EuQoS EU project and after this again adapted to the VITELS requirements by its original authors and the VITELS project.

3 Didactics

3.1Course Platforms

This guide also gives information for implementing the modules into course platforms. This general information is given in this chapter.

3.1.1 WebCT CE

After logging in to WebCT you access the MyWebCT page and chose your course.

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WebCT myWebCT	Entry Page Check Browser Log Out Hel
Welcome, Marc-Alain Steinemann Bookmarks Global calendar Preferences WebDAV info Course	March 31, 200
Courses	Announcements
CN-Visualization (inf_cnv) Instructor: Torsten Braun	There are no announcements.
EuQoS Course (inf_eugos_aai)	Institutional Bookmarks
Instructor: Marc-Alain Steinemann	Supported Browser WebCT 4.0
EuQoS Development (inf_euqos_dev) Instructor: Marc-Alain Steinemann	Ask Dr. C What is WebDAV
OLD VITELS 1 (inf_vitels) Instructor:	Subscribe to a free WebCT newsletter Instructors: Find ready-made content for your WebCT course
OLD VITELS 2 (inf_vitels_experience) Instructor:	Access WebCT online support
VITELS Development (inf_vitels_dev) Instructor: VITELS Productive	Personal Bookmarks
VITELS experience is everything (inf_vitels_aai) Instructor: VITELS Productive	Participate in an e-learning community Find a job or internship

You enter the course in the designer mode.

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	C+ Delete
	C+ Hide
	C Reveal
	🖙 Specify selective release
To add text to this area of your page, click Add lower textblock .	C+ Move backward
	C+ Move forward
	C+ Move to organizer page
	C+ Move to Course Menu
	🕞 Copy to Course Menu
	Options: Textblocks
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	C+ Edit
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	C+ Move up
	C+ Move down
	Customize
	Modify layout
	Customize page colors
	Modify/Add background image
	Modify/Add banner image

If you want add a learning module, use Add Page or Tool.

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Single Page	Content Module 🛛 🗮	Mail 🗮	Self Test	My Grades				
URL	Glossary	Chat 🐥	Assignments	Language Selector				
	Image Database	Whiteboard	Student Presentations					
	Index	Calendar 🗮 👯	Student Homepages					
	Content Utilities	Student Tips						
	Search							
	Compile							
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CD-ROM								
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Then select Content Module. Add Content Module

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Control Panel EuQoS Course (inf_euqos_aai) View Designer Options						
Course Menu - Momepage > Expanded Control Panel > Add Page or Tool	> Add Content Module					
Add Content Module						
1. Enter a title for this item: YourModuleName						
2. Decide where to show the link to this item.						
On the Course Menu, visible on all pages. Link will appear as text.						
✓ On an Organizer Page: Homepage ▼						
Link shows item title						
Link shows icon (select below)						
🔿 Use default icon						
 Use custom icon 						
Choose icon: PathToIcon Browse						
3. Add this item to your course.						
Add Cancel						
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		C Delete					
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		C Move down					
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		Modify layout					
		Customize page colors					
		Modify/Add background image					
		Modify/Add banner image					
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If you got into the module by clicking on it you get an empty ToC. If you have already uploaded your files generated with FFGF you can now link these files into the ToC with Add Files. After adding the files you have to indent the files to get the correct structure with heading and sub headings.

```
Select Edit/Add upper textblock and paste this text:
<link rel="stylesheet" href="/_COURSEID_/design/vitels_style.css"
type="text/css"/>
<body class="lightgray">
```

```
SelectEdit/Add lower textblock and paste this text:
</body>
```

Select Edit Content Module Settings and check Take Notes and Hide Page Numbering.



Now you have to go to Control Panel,

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Expanded Control	Panel Basic Con	trol Panel				
Add Page or Tool	Edit Page or Tool	Manage Files	Manage Course	Course Settings		
Assignments Calendar CD-ROM Chat Compile Content Module Discussions Glossary Image Database Index Language Selector Mail My Grades My Progress Organizer Page Quizzes/Surveys Resume Course Search Self Test Single Page Student Homepages Student Homepages Student Tips Syllabus URL Whiteboard	Update the student view of the Content Modules in your course. Update student view Homepage	Upload Create Edit Copy Move Rename Delete Zip Unzip Download Convert Charset	Manage Students Track Students Manage Teaching Assistants Track Pages Backup Course Reset Course Share Access Import Content Export Content	Instructor's name Language Numeric data format Time display format Course Menu display Designer start page Designer links Edit Course Menu Edit welcome page Customize course colors Modify/Add background image Modify icon style Replace individual icon Customize course news		
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Manage Files to add the directories for you module.

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Folders and Files Click on a folder below to view its files. Display this file information: V Size V Date V Time Update	Actions □↓ indicates a selection is required from the main frame. □¬↓ indicates multiple selections are allowed
Name Size (bytes) Date Time	Options: Files
demo_module 1 2 3 4 doc pictures	Create file F Edit F Delete F Copy F Move F Rename F Zip F Unzip Upload F Convert charset
Done	Options: Folders Create folder • Delete • Rename • Zip webct.unibe.ch:8900

Use lower case letters and join the words with an underscore: demo_module. In this directory open six folders named: 1, 2, 3, 4, doc, pictures.

Now you go to the Control Panel and chose Edit Page or Tool, Discussions. You Create a Topic with the name of your module. Put it in the right order as indicated in the module vicinity.

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Disc Com Click	ussions pose message on a topic name	to see it:	a rch	Topic set	tings		Actions □₄ indicates a selection is required from the main frame. □□↓ □□↓ □□↓ □□↓ □↓ □↓ □↓ □↓ □↓
	Topic	Unread	Total	Private	Anonymous	Locked	🔆 Use Discussions Wizard
	Main	0	0				Options
	Notes	0	0				Create topic
	Demo Module	0	0				🕞 Rename topic: 🛛 🛛 🖓 Go
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R∎ Move item down by: 1 💌						🕞 Move item down by: 🚺 💌 Go	
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For adding quizzes you go to Edit Page or Tool. You find the option Quizzes/Surveys. On this page you have to add a label with Create Label, named after your module. You can now create the quiz entries with Create Quiz. Download the questions after adding for security reasons and guard the file.

Each module has these Quizzes:

Label YourModule

Logbook (YourModule)

My Goals (YourModule)

Personal Synthesis I (YourModule)

Quiz (YourModule)

Personal Synthesis II (YourModule)

Final Quiz (YourModule)

Survey (YourModule)

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Quizzes/Surveys Question Database To view additional Quiz, Question and Student Information, click on Submissions, Detail, Reports or Summary.	Actions (& indicates a selection is required from the main frame.					
🔗 0 Available 🕴 😳 0 Due soon	Options					
Display: All quizzes and surveys Go March 31, 2005 12:29	Create quiz Create survey					
🔿 Demo Module	Create label					
🔿 🔍 Logbook (Demo Module)	G+ Edit					
Availability: Unavailable	C Delete					
Duration: Unlimited Points: /	Edit titles					
Results: Submissions Detail Reports Summary						
🔿 🍳 My Goals (Demo Module)	Organize					
Availability: Unavailable	Gr Indent: More M Go					
Duration: Unlimited Points: /	G Move item up by: 1 M Go					
Results: Submissions Detail Reports Summary	🕞 Move item down by: 🚺 💌 Go					
🔿 🍳 Personal Synthesis I (Demo Module)	Customize					
Availability: Unavailable	Customize page colors					
Duration: Unlimited Points: /	Modify/Add background image					
Results: Submissions Detail Reports Summary	Modify/Add banner image					
🔿 🔍 Quiz (Demo Module)	Edit/Add upper textblock					
Availability: Unavailable	Edit/Add lower textblock					
Duration: Unlimited Points: /						
Results: Submissions Detail Reports Summary						
🔿 🔍 Personal Synthesis II (Demo Module)						
Availability: Unavailable						
Duration: Unlimited Points: /						
Results: Submissions Detail Reports Summary						
🔿 🍳 Final Quiz (Demo Module)						
Availability: Unavailable						
Duration: Unlimited Points: /						
Results: Submissions Detail Reports Summary						
🔿 🍳 Survey (Demo Module)						
Availability: Unavailable						
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Enter each of the quizzes and chose ${\tt Edit}$ ${\tt Quiz}$ ${\tt Settings}$ to adjust the settings .

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Control Panel EuQoS Course (inf_euqos_aai)	
▶ - Course Menu - ➤ Homepage > Evaluation > Quiz Editor > Settings	
Quiz Editor: Logbook (Demo Module) Quiz editor Submissions Detail Reports Summary To select a question, check the box to its left. To preview a question, click Q. To edit a question, click the question's title. To assign points for each question, enter a number in the Points Field next to each question, then click Update total. No questions have been added to the quiz yet.	Actions right indicates a selection is required from the main frame. right indicates multiple selections are allowed. Options Add questions Add question set right Add question alternates right Remove question Edit quiz settings Preview quiz
	Organize Move item up by: 1 Go Move item down by: 1 Go Customize Customize page colors Modify/Add background image Modify/Add banner image Edit/Add upper textblock Edit/Add lower textblock
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Now add all the required settings, such as the email: <u>YourModule@vitels.ch</u>

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🕨 - Course Menu - 💌	Homepage > Evaluation > Quiz Editor > Settings
Quiz Settings: Logi For information on how	book (Demo Module) to use quiz settings, click Help in the top menu bar.
Basic Settings	
*Quiz title:	Logbook (Demo Module)
Question titles:	Show the question titles when students view the quiz.
Question delivery:	 Deliver all the questions at once. Deliver one question at a time, where any question can be revisited. Deliver one question at a time, where students must answer or skip each question to proceed. Once a question has been answered or skipped it cannot be revisited.
Quiz duration:	 minute(s) Disallow answer submission if time has expired.
Attempts allowed:	Unlimited 💌
Attempts separation:	Minimum time between attempts: minute(s) 💌
Availability Available after:	March 😧 31 🔽 2005 💌 12 💌 35 💌 Allow access now
Available until:	V V 00 V 00 Deny access now
Selective Release	
Release to:	Select
Release based on:	Contains
Hide:	🔲 Remove this quiz from quiz/survey lists if students do not meet the selective release criteria.
Security	
Proctor password:	Students must enter the password to gain access to the quiz.
IP address mask:	Only machines which match the IP mask may be used to access the quiz.
Submission	
Submission message:	Thank you for submitting your work.
Email submissions:	Send a copy of each student's submission via e-mail to
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🕨 - Course Menu - 💌	Homepage > Evaluation > Quiz Editor > Settings	
IP address mask:	Only machines which match the IP mask may be used to access the quiz.	^
Submission		
Submission message:	Thank you for submitting your work.	
Email submissions:	Send a copy of each student's submission via e-mail to DemoModule@vitels.ch .	
Results		
Student score:	If multiple attempts are allowed, use the First 🛛 💌 score for the student's grade.	
Student score release:	Allow students to review their submitted Quiz. Show the Quiz score if it has been graded or partially graded.	
	O Release the score once the quiz has been submitted.	
	Release the score once the quiz has been submitted and all the questions have been graded.	
	O Release the score once the availability period has ended.	
	O Release the score once the availability period has ended and all the questions have been graded.	
	O Do not release the score.	-
Release column:	Release the Quiz column so students can see their grade in the MyGrades tool. You can also control the release of this column from the Manage Students page. (See Manage Course > Manage Students.)	8
	⊙ Yes ○ No	
Student results display:	a) Show the guestion text for each guestion.	
	b) Show the student's response for each question (requires: a)	
	C) Show the evaluation of the student's response only. (requires: a, b) excludes: a)	
	d) Show the full evaluation of each question. (requires: a, b; excludes: c)	=
	e) Show the correct answer for each question. (requires: a, b)	
	f) Show the feedback for each question.	
	g) Show the student's score for each question.	
	h) Show all the grader's comments for the quiz.	
	☑ i) Show the student's total score for the quiz.	
Update Cancel		
*Required fields.		
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20116	webcchuidercusann C	<u> </u>

Now you choose Question Database at the top of the Evaluation page. You choose the category of quiz you want to edit or add questions (My Goals, Quiz, Personal Synthesis I, Personal Synthesis II, Final Quiz, Logbook, Survey). Once in the proper category, you choose Create Question and select which type of question it has to be.

For the logbook:

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Paragraph Question	Ouestion	5.0
Question	n.	
Question	I setesti	
Calegory:		
*Title:	Logbook: Demo Module	
*Question:	It replaces the real logbook known from real laboratories. In case of problems, this logbook can you and your tutors to find the reasons for them. You can enter as many times as you wish. Save the essay when you want to continue later and finish for the evaluation by your tutor. Equation: Create equation Clean Equation editor Format: O HTML O Text Image: Browse	
Settings		
Answerbox size:	50 🔽 lines long 🛛 60 🔽 columns wide	
Answers	Environmente productiva da su Environmente Segura da servizia da servizia da servizia da servizia da servizia d	
Pre-fill answerbox:	Equation: Create equation M Equation editor	
Correct answer:	Equation: Create equation Y Equation editor	
	Format: V HIML V Text	
Head By 1		
USED DY1:		
Save Cancel		
"Required fields.		
Done		webct.unibe.ch:8900 👸

Syntax:

Quiz YourModuleName QuestionName

Add also the example solution as in most cases other tutors as you have to evaluate the quizzes and they might not be experts in the module's topic.

The Logbook, My Goals and Syntheses questions can be cloned and adapted from the demo module. The questions for the survey exist already and can be selected, depending to the content of the module.

Once done with adding question you chose again Quizzes/Surveys at the top of the page. You now go into the quiz where the questions have to be added and add one question after the other. At the end you distribute the points.

Now you have to link all the quizzes to the Action Menu Bar. You go to each course page and add the respective quizzes. Remember that the logbook has to be added to each single page.

Go to the Self Test page.



Chose the Designer Options tab.

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Control Panel	VITELS experience is View Designer Opt	everything (inf_vitels_ tions	_aai)
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* Links to the Glossary ar below.	nd Index will not appear in t	the Action Menu until the tools	; are selected manually
Select the Action Menu ite	ems you would like to appe	ar for this content page.	
🗹 Take Notes	🗖 Bookmarks	Search	
Chat	Discussions	🗖 Mail	
Quiz Quiz	🗖 Glossary	🗖 Index	
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Click on Self test under the title Action Menu.



Add the question here or directly in a .txt file. DO download the questions after adding them! If you change the page name or move the page your questions get lost forever!!!

3.1.2 WebCT Vista

After logging in to Vista you get a screen similar to this one:

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My WebCT		
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	IAM	VITELS - VITELS Test 1
	EuQoS - EuQoS Development	VITELS 1
	<u>EuQoS - EuQoS Experience is</u> Everything	IAM 1 VITELS - VITELS
	VITELS	Experience is Everything
	<u>VITELS - VITELS Development</u> Section Instructor: raphael kummer	VITELS - VITELS Development 1
	VITELS - VITELS Experience is Everything	EuQoS - EuQoS Experience is Everything 0
	VITELS - VITELS Test	EuQoS - EuQoS Development 0
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You can set how your MyWebCT screen should look like with the Layout page.

Select your course where you want to enter. If you let your mouse on a course name, your role is shown in a popup.

You enter the Homepage, where you can choose between different views:

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Basic View Power View (Content Inventory 🔄 File Manager 🖉 Search 😫 Content Import 🔚 Backup
Add to Course Toolbar:	A Assessments 🔗 Discussions 🚯 Notes 🖪 My Grades More Tools⊽
Course Toolbar:	
(tools always visible)	No tools have been added to the Course Toolbar.
O <u>Toolbar Settings</u>	
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Add to Home Page	
👌 Assessments »	Click here to add header to page
🔊 Assignments »	
🤤 Chat and Whiteboard »	
Content File »	
🔗 Discussions »	Your Home Page is currently empty.
📑 Learning Module »	content.
🔒 Media Library Collection »	
👩 Organizer Page »	
🔢 Syllabus »	
URL »	Click here to add footer to page
More Tools »	
🕤 Tool Overview	
🔢 Course Customization »	
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If you want to add a learning module, click Learning Module. Then select Create Learning Module.

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Done		

Now click on your module and change to Power View. If you have already uploaded your content files generated with the FFGF tool you can now select Content File, Select File.

Change back to Basic View, click on your module and chose Edit.



Edit Action Menu. You have to come back to this page for adding your modules discussion topic and the logbook.

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WebCTVista [™]				<u>Help</u>
Build		EuC	os - EuQ	oS Experience is Everything
Content Inventory				
Learning Module > Demo Module	9			
Action Menu Settings for: De Action Menu Links (These links wi	emo Module Il appear on the Action	Menu for this Learning Module.)	Acti	on Menu Status 💿 On / 🔾 C
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Links	options 🤉	Tool	On / Off	These controls aid in browsing the Learning Module and cannot
Discussion Topic	4	💾 Bookmarks	. ∕ ⊙	be turned off.
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Assessment	4			
Media Library Collection	4			
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Goals	-			
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Now go to the Homepage and select Discussions, Create Discussion Topic. Enter your module's name.

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Settings		
*Title:	Demo Module	
	 Topic is gradable (a column is automatically created for this topic in Grade Book) Grade Book column title: Numeric grade: Out of Alphanumeric grade 	
	Editable posts (allow Students to edit their messages in this topic after posting them)	
	Locked (topic is in read-only mode)	
	Anonymous (author names are not displayed)	
More Opt Save	tions (Expand this area to see more options.) Cancel	
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Done		

In the Basic View you go to the Assessments, Go to Assessments. On this page you have to list all the Quizzes of your module. This list lists all the quizzes of each type and of all modules and then the next type:

Final Quiz (ModuleName) Select Quiz
Final Quiz (ModuleName) Select Quiz
...
Logbook (ModuleName) Select Quiz
...
MyGoals (ModuleName) Select Quiz
Personal Synthesis I Select Quiz
Personal Synthesis II Select Quiz
Quiz Select Quiz
Self Test Select Self Test
Survey Select Quiz

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My Goals (Demo Module)	Quiz	No	1 Hour(s)	0	🙁 🙆 🖵 🔛 🗧	x
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Personal Synthesis II (Demo Module)	Quiz	No	1 Hour(s)	0	0 0 D D E	× •
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For adding your quiz entries choose Create Assessment at the bottom of the page. Once added the entries you chose each quiz and then add the questions with example solutions as in most cases other tutors as you have to evaluate the quizzes and they might not be experts in the module's topic. Do also add points to the questions

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Assessments > Final Quiz (Demo	Module) Go to: L	ogbook (Demo Module) 🛛 🔽 🖄
Add to Assessment	Final Quiz (Demo Module)	
Add Existing Questions	Available: <u>No</u> 🛛 🙆 <u>Edit Settings</u> 🔂	Set Release Criteria 🛛 📮 Preview
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Paragraph		
Short Answer		
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Done		

Chose Edit Settings and update the settings and enter the email: <u>YourModule@vitels.ch</u>

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Assessments > Fin	nal Quiz (Demo > Edit Assessment S	
Edit Assessment	it Settings	
Settings		
*Title:	Final Quiz (Demo Module)	
*Grade Book column name:	Final Quiz (Demo Moc The Grade Book column name appears in Member Management as a column header for this assessment.	
Question titles:	Display question titles.	
Question delivery:	 Deliver questions all at once. 	
	O Deliver questions one at a time and allow questions to be revisited.	
	O Deliver questions one at a time and do not allow questions to be revisited.	
Duration:	O Unlimited	
	O Time: 1 Units: Hour(s)	
	Disallow answer submission if time has expired.	
Attempts allowed:	Unlimited 💌	
	Randomize questions in a question set for each attempt	
*Attempts separation:	Minimum time: 0 Units: Minute(s)	
Student score:	If multiple attempts are allowed, display the grade of the First 🛛 🕅 attempt as the student's grade.	
Student score	O Release the score once the assessment has been submitted.	
1010030.0	• Release the score once the assessment has been submitted and all of the questions have been graded	1 .
	○ Do not release the score.	
More Options (Cl	lick on the arrow icons to expand or collapse these optional settings.)	
Dates Availabl	le	
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Security Setting	ngs	
Save Cancel		_
*Required fields	1	
Done		

Now go to the FileManager. Create a folder with the name of your module with lower case letters joined by an underscore.

In this directory open six folders named: 1, 2, 3, 4, doc, pictures.

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After uploading the files you have to link them to your content module. Finally you have to link the quizzes which have to appear on single pages to the action menu bar. Choose edit learning module on the basic view

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and then Edit Components in Action Menu button.

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3.2Common Introduction Modules

This section explains the introduction module located at the top level of the final course. Module designers should read this section for a minimal understanding of the course philosophy although few module designers will ever implement this introduction module.

3.2.1 Structure of the Introduction

The VITELS course is hosted on a single course server with external laboratories for hands-on sessions. The common introduction for all modules is a chapter

located in the main area of the VITELS course. It introduces students to the module structure, explains all the common parts of the modules and also provides answers to frequently asked questions. The chapter is called **Global Introduction and FAQ**. This chapter's task is to avoid re-iterations in each of the VITELS modules.

The structure of the chapter:

- a. **Global Introduction** (Course global objectives, VITELS didactical approach with brief justification/explanation, course structure and sections, authors/credits...)
- b. **General Students' Resources & Guidelines** (Studying online, laboratories reservation, resource list/links, record of student progress, FAQ...)

3.2.2 Implementation of the Course Structure

Global Introduction

Course Chapter Name:	VITELS Global Introduction and Resources
Course Chapter Color:	1

Course Global Objectives

Course Chapter Name:	Course Global Objectives
Course Sub Chapter Number:	1

Goal: Pointing out the mission of VITELS.

VITELS' Mission: The Virtual Internet and Telecommunications Laboratory of Switzerland (VITELS) is a hands-on sessions oriented Internet-based course framework. The audiences are computer sciences students that have completed their first two years and students from technical universities. Each VITELS module introduces a topic that has a relation to the Internet or to telecommunications. The most important aspects are discussed and introduced with theory, exercises and at least one hands-on session.

VITELS provides knowledge through trial-and-error approaches.
VITELS Didactical Approach

Course Chapter Name:	Didactical Approach
Course Sub Chapter Number:	2

Goal: Students and visitors should get an impression about VITELS' way of teaching.

Pedagogical Approach: VITELS is designed for persons that have already acquired a two year's knowledge in computer sciences or similar branches, engineers or persons who need a theoretical background in telecommunications but have a base knowledge in Internet technologies. This already existing knowledge provides the foundations for understanding each module's new lecture material. It also helps students to develop the autonomy and initiative required by e-learning, more specifically during the exploration of the laboratory activities. Autonomy and initiative development is supported by providing guidelines and reflexive activities.

The VITELS e-learning course framework is an extension to traditional teaching activities in universities and industrial further education. VITELS course modules should help students to go beyond traditional expository teaching. After the mastering of the basic knowledge, students are asked to effectively analyze and solve problems from real existing situations. All those situations are taken out of the life of telecommunications and Internet experts. These hands-on sessions allow students to apply their theoretical knowledge in a trial-and-error process. Hence, by learning in simulated, emulated and real network environments, students can develop skills for self-directed problem-based learning which will help them throughout their life. To do so, each module includes at least one hands-on session scenario. The content of the modules, from the introduction to the tests is designed to fully integrate the hands-on session.

VITELS' modules combine the delivery of basic knowledge and the exploration of real tasks in order to develop effective know-how. In addition, reflective processes, which permit to make sense of exploration and problem solving, are supported by note taking in a personal logbook throughout the modules' activities.

Course Structure and Sections

Course Chapter Name:	Course Structure and Sections
Course Sub Chapter Number:	3

Goal: A short overview of the module structure.

Course Structure and Sections: The VITELS course is a framework of in itself closed modules and the modules can be visited independently from each other. All VITELS course modules are similarly designed to allow easy navigation and orientation. The modules' structure with short explanations is listed below:

- **Introduction:** The introduction leads you to the topic of the module. Among many other useful stuff you find special requirements, the learning goals and a module specific FAQ. In this section you write a short description of your personal expectations and goals for this module.
- **Basic Knowledge Acquisition:** The basic knowledge acquisition section is • the place where you have to study theory. You start with theory and interactive exercises. Another part of this section is scientific reading, which gives you an insight in the scientific notation of the module's topic. The Self Test helps you to minimize the theoretical work by giving you the answers immediately and additionally pointing you to further readings in case of wrong answers. The Self Test is also a place to check if you have to read through the whole theory or not. In a personal synthesis you identify what you have learned and can make links with your personal goals. You may as well use this task to build connections between the newly acquired knowledge (theory) and your previous knowledge in order to go further in your understanding of the topic. Additionally, you may organize your knowledge in concept maps to better prepare the quiz and to re-use it more easily during the following activities. This section ends with a quiz that is graded by a tutor.
- **Knowledge Application/Exploration:** Knowledge application and exploration is the place to apply the previously acquired skills. This is the section with the hands-on session scenarios. The situations in the hands-on session can be simulated, emulated or real. This is also the section where you can work in a team during the hands-on session. It is not forbidden to discuss your understanding of the results/explorations with other students. You finally use the same results for your **individual** interpretation in the final quiz.

• Evaluation of Acquired Knowledge and Skills: A first task is to write another synthesis by using your personal notes. You try to self-evaluate your degree of mastering the chapter's goals. This helps you to prepare your final quiz. This section ends with a final quiz that lets the tutors see if you have met the goals listed in the introduction section of the module.

The Basic Knowledge Acquisition and the Knowledge Application/Exploration chapters may contain special content only devoted for a special audience. You may also work through this supplementary content but you will use more than the 15 hours for the base module. You can easily identify this content by its markers on the top right side in the header. The markers contain the name of the addressed audience, such as engineers, university students or others.

There is one glossary for all the modules integrated in the course platform. Articles of text references are contained in the Recommended Readings Section.

Authors/Credits

Course Chapter Name:Authors and CreditsCourse Sub Chapter Number:4

Goal: Presentation of the module designers and staff.

Authors/Credits: Authors' names: Links to authors: Contact information:

General Students' Resources & Guidelines

Course Chapter Name:	Resources and Guidelines
Course Chapter Number:	2

Studying Online

Course Chapter Name:	How to Study
Course Sub Chapter Number:	1

Goal: Studying online is very different from conventional studying. This chapter introduces conventional students to the new learning modalities.

Studying Online: Online courses lack many well known features of studying. Think on text markers or the possibility to take notes in scripts. Less important but still, in conventional learning you can study almost everywhere, you can even take your script and read through while sitting in a hot bathe. If you want to keep the script you simply store it together with all your personal notes and probably with the exam too. If you need it one day, maybe ten years later, you simply open a cartoon box and have it at your fingertips again.

Conventional learning has a lot of advantages and one of the most important is: you are used to it.

But studying online is getting more and more popular. Tutors can, for example address a bigger audience without a loss of teaching quality. There are many advantages for you too: You study whenever you like to. The VITELS course is open 24/24h and 365 days a year. It offers interactive content where you apply and increase your skills. You get pointers to additional lecture and content and are able to access it at once. Many useful tools are integrated, such as a glossary or a discussion board.

Comparing conventional and online learning, there is still a lot to improve in online learning. But already now, online learning offers a rich environment with many useful and interesting contributions.

Human beings are creatures of habit. Therefore it is not surprising if you do not like your first experiences with the new learning style. With a little effort of your side you should start feeling comfortable in the new learning environment soon.

Laboratory Reservation System

Course Chapter Name:	Laboratory Reservation System
Course Sub Chapter Number:	2

Goal: Introduction and explanation of the laboratory reservation system for modules with restricted hardware resources.

Laboratory Reservation System: In some modules it is necessary to reserve time slots for the hands-on sessions in the laboratories because the expensive laboratory devices are available only in limited numbers. The laboratory reservation system does not affect anything else than the admission to the laboratory devices of the respective modules. Everything else of these modules is accessible all the time.

The VITELS course has a reservation system to manage the restricted equipment capacities of those laboratories.

You find the link to the reservation system on the course homepage and in all the modules where you have to book time slots.

You authenticate with your authentication and authorization infrastructure credentials. This is normally the user name and password assigned to you by your home organization.

We advice you to only book two time slots per module and week. You can book in advance and have the opportunity to get your preferred time slot. It is possible to reserve additional time slots if you need to: If there are still free slots one day before the day you are allowed to book them. Remember that you presumably cannot work concentrated during more than one slot

You can and should free time slots that you are not going to use.

Resource List/Links

Course Chapter Name:	Resource List and Links
Course Sub Chapter Number:	3

Goal: Providing additional information sources.

Links: The links presented here are of general nature and not module specific. www.vitels.ch www.euqos.org www.whatis.com www.swissvirtualcampus.com www.cisco.com

Each module has an own resource list and links section.

The glossary is integrated in WebCT. Each module designer adds the specific terms to the respective glossary.

References are a part of the Recommended Readings section.

Record of Student Progress

Course Chapter Name:	Record of Student Progress, Evaluation and
	Logbook
Course Sub Chapter Number:	4

Goal: Document the student's learning history. This helps in cases of problems and for a review of the learning progress.

Record of Student Progress: When working through the course modules you encounter different tools that help evaluating your knowledge level. Most of them are evaluated by tutors and you can earn points:

- Discussions	0
- Logbook	25
- My Goals	20
- Personal Synthesis I	20
- Self Test	0
- Quiz	20
- Personal Synthesis II	20
- Final Quiz	30
- Surveys	5

All of the above mentioned tools are required to complete a learning module.

A helpful tool is the logbook. You might be familiar with this tool from real laboratories. The logbook is a virtual note book, where you add comments and notes made during the learning process. You start using the logbook at the very beginning until the very end of the module. Each module has its own logbook ready for you.

Click on Quiz in the Action Menu at the top and choose Logbook. You get to the Quiz dialog and then you can start.

There are no time limitations for this task and you can always come back. Another entry point to this task is via Evaluation on the Navigation Bar on the left hand side.

Hint: You can take notes with WebCT's "take notes" tool and then copy and paste them to the logbook at the end.

Evaluation criteria for the logbook:

You can earn a total of 25 points for this task:

- 5 points for a correct syntax and language

- 20 points for the quantity and the quality of the content

WebCT: Quiz (Note book): - maximal points available: 25

- must be available all the time
- must be exclusively displayed on the left navigation bar
- can be repeated
- must be set to "essay question"
- must not have a time limit
- tutor Email notification must be set on

Discussions

Course Chapter Name:	Discussions
Course Sub Chapter Number:	5

Goal: Discussions accompany the learning process and help students to exchange and improve knowledge. IT is the preferred place for teamwork if students do not live at the same place.

Discussions: Discussions are a major part of daily life and of this course. Throughout the whole course you encounter minor and major problems that can block your progress.

A good way to get help is in the discussion board. It is also the place where you can help others.

Evaluation criteria:

You can earn a total of 0 points for this task in each module.

VITELS Help Pyramid

Course Chapter Name:	VITELS Help Pyramid
Course Sub Chapter Number:	6

Goal: This section explains how students get help in case of problems.

VITELS Help Pyramid: You as a student expect a fast response in the case of problems such as hardware failures but also in other cases where you are stuck. We suggest a help pyramid where the personal help of a tutor is located on the top. Each step of the pyramid represents an instance where you can look for answers to your problem. You start with the frequently asked questions section of the course or the respective module. In the second step you browse the discussion board and if the problem is not urgent, you post a question. If this does not help, you write an Email to your tutor or other responsible person indicated in the respective module. As a last step, only recommended in very urgent cases, you use the telephone support of your tutor.



Figure 1: VITELS help pyramid

If there arise problems, course students need feedback to their questions. The help pyramid filters many self-resolvable questions and only urgent question find their way to the tutor.

A discussion board generally helps to resolve problems and involves eager students in the support process. A discussion board is also a platform for discussing hot topics related to the course.

After each course cycle, important questions have to be extracted of the board and summarized in the frequently asked questions section.

FAQ

Course Chapter Name:General FAQCourse Sub Chapter Number:7

Goal: The FAQ section gives answers to questions that concern all the modules.

If the FAQ grows bigger than 20 questions a search or indexing function should be integrated. For the beginning, Questions are alphabetically sorted.

FAQ:

Course:

Q: How can I shorten the theory section, I think I already know most things? A: There is a self-test and if you pass the self-test without problems you probably pass the quiz with any problems.

Q: Is there an order in the modules?

A: Yes there is. If you start with module one and do all the modules you always learn the necessary things for the next modules. The base knowledge for module one is two years of computer science studies at university. You are free to make the modules in any order you prefer.

Q: Do I have to work through all the modules?

A: No, you attend only the modules that you like or that your tutor declares as required.

Q: What is the maximal amount of points I can get in a module?

A: The maximum is 140 points. 0 points for 3 postings in the discussions, 25 points for the logbook, 20 points for the verbalization of the personal goals, 20 points for the synthesis about the theory section, 20 points in the quiz about the theoretical section, 20 points for the synthesis and 30 points for the final quiz. Another 5 points are added for each survey.

Q: How many points do I absolutely need to pass one module?

A: You can get a maximum of 100 points. To pass the module you need 60 points.

Q: Do you have to write all the essays and log books in each module?

A: Yes. If you look up the storyboard you see how much time you can spend in each section. This time includes the time you spend for writing the essays, logbook, and surveys. The essays and the logbook help you to memorize better the learned methods. The first essay helps you for the hands-on session and the second essay for the final quiz.

Q: We work together in the hands-on session. Can we make only one quiz for both?

A: No. You are encouraged to discuss theory and as well the together made hands-on session. But the quizzes, although the probably build on the same results, must be solved independently. You memorize more of the studied content when you solve the quizzes at your own.

Q: Is there a pdf that contains the whole theory of a module?

A: Yes, each module contains a pdf of the theory section in recommended readings section.

Q: Where do I need the reservation system?

A: You need the reservation system for the modules Simulation of IP Network Configuration, IP Security, Firewall Management, Sockets and RPC, Remote Method Invocation and Application Server.

Q: What is the preferred language for my activities?

A: Try to answer in English. This helps you for you later work, especially writing articles. If you feel uncomfortable, you may also reply in German or French.

Q: I have problems with WebCT. What can I do?

A: WebCT is run by University of Bern. You should read the help pages on <u>http://webct.unibe.ch</u>.

Software:

Q: How can I keep the output of the MindTerm shell for later use?

A: You can save the output of the MindTerm shell to a file by enabling the option "Capture To File..." from the "File" menu.

Q: When the MindTerm Applet starts up the first time, the "License agreement" window is displayed without any action buttons. How do I proceed?

A: You need to maximize the "License agreement" window to make the action buttons visible.

Q: In a previous lab session I saved my MindTerm settings while being connected to host A. Now, whenever I click on host B, MindTerm connects to host A. What shall I do?

A: You should delete your MindTerm settings and reconnect without saving any settings. Although this problem seems to be related to an older version of MindTerm, it is generally not recommended to save your MindTerm settings.

Survey

Course Chapter Name:SurveyCourse Sub Chapter Number:8

Goal: Get an impression of students' experiences and equipment.

Survey:

This survey helps us to know more about you. We need your feedback to adapt and improve this course. Please fill out all the fields.

Evaluation criteria:

You can earn a total of 5 points for this task:

- each not answered question reduces the total points by 1

General Quiz Settings	Quiz: - maximal points available <mark>: 5</mark>
	- must be available all the time
	- must be displayed on the respective page in the action menu bar
	- can be repeated
	- use the existing survey questions for your module and distribute the points so that you get 5 totally.
	- tutor Email notification must be set on in the quiz settings Chose Edit Settings (<u>YourModule@vitels.ch</u> WebCT sends an Email after each received quiz)

WebCT CE and Vista: please see under 3.1 how to add a quiz.

3.3Learning Content Modules

This sub chapter describes how to implement a module and gives basic didactical, implementation and formatting information for module designers. Module designers should follow this chapter step after step.

Each module designer has to add as many entries as possible into the glossary, existing in the course platform. Please take care to not violate any copyrights.

3.3.1 Structure of the Modules

Goal: Getting a common, unique module and content structure throughout the whole course.

All VITELS course modules have the same structure, although it is possible to split up the hands-on session and thus to repeat step b several times.

The **required** structure of the modules:

• Introduction:

- a) Welcome
- b) The Goals and How to Reach Them
- c) Module Vicinity
- d) My Goals
- e) Tips
- f) FAQ

• Basic Knowledge Acquisition:

- a) Theoretical Basics (supplementary content possible but marked as described above)
- b) Readings
- c) Personal Synthesis
- d) Self Test (formative evaluation) with links to sections related to wrong answered questions
- e) Quiz (success required to access laboratory)

• Knowledge Application/Exploration:

- a) Introduction
- b) Hands-on Session (Laboratory work, can be simulation, emulation or real (supplementary content possible but marked as described above. Automatically tracking exercise data is desired, else exercise results should be saved by students. Possible teamwork to solve/discuss the task)

• Evaluation of Acquired Knowledge and Skills:

- a) Personal synthesis
- b) Final Quiz
- c) Survey

3.3.2 Implementation of the Course Structure

Introduction

Course Chapter Name:	Introduction
Course Chapter Number:	1 (yellow chapter)

Welcome Message

Course Chapter Name:	<mark>Welcome</mark>
Course Sub Chapter Number:	1

Goal: This is the "modularized" introduction section.

Abstract: Welcome message and a 10 lines introduction (abstract) to the module. It is recommended to add a short video welcome message. [Presenters Online] answers many questions on how to make a video.

Useful tips for your video presentation:

- Adequate illumination
- Look into the camera
- Talk such as you would do to your best student if you want to convince him
- Bring personal experiences into the message
- Show why the module is important
- Emphasize the three most important things of the module
- Wish fun and luck

Special Requirements: All the requirements of the module, such as knowledge in programming languages.

Authors: Responsible organization and person of the module. This is the same information as in 2.1.2.1.4.

Goals Linked with Activities and Time Expected

Course Chapter Name:	The Goals and how to Reach Them
Course Sub Chapter Number:	2

Goal: Students know what they are going to learn and also how much time it takes them.

This section consists of a list of goals (a list of what is expected), a storyboard and a schedule as described below:

Students must know be very clearly informed about their activities and how they have to be performed as well evaluated (written in the second person singular to point out the fact that these goals are directed to your students):

- Goals: What you are going to learn in this module.
- What is expected from you (or how to reach these goals):
 - What you will be asked to do (activities) (description of main activities and student learning/studying strategies with a reference to the storyboard)
 - Why this is important
 - How you will be evaluated (test description and evaluation criteria, type of quiz or exam)
- How much time it should take.

Goals: The module goals are listed and briefly explained. Goals must be precisely formulated and not sound as: You learn what computers are.

There are mainly three aspects that must be covered in the formulation of a learning goal:

- 1) The task: What kind of activity must be done by the student? You must use a verb in the formulation. Try to use a verb or an action that can be measured/assessed. Possible verbs are for example: writing, managing, reading, organizing, researching...
- 2) The condition: How must the student perform the task? You must add objects to the verb: by measuring the traffic, by writing a socket, by summarizing the theory. You can add more conditions: in a team, alone, with the two routers, without help. You can even include variables: no matter how high the CPU load is, no matter how much time it takes.
- 3) The standards: How well the student must perform the task. Many times you find standards defined like this:
 - a. -How often? (every day, ten times, before starting the laboratory)

- b. -How well? (until passing the test with 0 errors, within one hour)
- c. -How many? (set up two different networks, collect two logs of the measurement)
- d. -How much? (during two hours)
- e. -How will I know it is done? (until being able to answer the asked questions)

Storyboard: This section contains three subsections:

- 1) A short description of the learning and studying activities. (a little story, contains some lines of text as a contrary to the very short formulated goal)
- 2) An explanation of why doing the proposed activities will permit to reach the target goals with high standards. (by giving a reason for the task it seems less stupid)
- 3) How they will be evaluated or how the level of goals reached will be assessed. (short description of test types and criteria for the evaluation if not covered by the general introduction chapter)

Schedule: A schedule statically lists the main chapters and the time students are expected to spend in each. The schedule is graphically designed and shows the times expected and already spent in a module. The total time for one module is 22,5 hours. This should help students to plan their online work and study time.

Important: The Schedule section including title is generated automatically!

Relationship to other Modules

Course Chapter Name:Module VicinityCourse Sub Chapter Number:3

Goal: Most students have to work throughout the whole course, others through few modules. The map shows the logical order and its relation to the rest of the course.

Position Map: The module has a proposed position among all the other modules. The main idea behind the position map is to graphically locate the module in its vicinity with the other modules for those students that work through the whole course.

The map must additionally inform about the possibility to perform the modules independently and in any desired order.

Mind Map: Mind Maps are a method to reflect associations. In those maps, the main topic is located in the centre. From there, branches grow outwards in all directions. Written on each branch and sub branch are key words. For more information visit [Mind Maps] or [Inspiration].

The module name is written in the center circle of the map. At least some of the main branches must be printed in and named. It is recommended to add some smaller branches too, to provide an impression about the module and the relationships to other topics. The map must be printable so that students could add additional branches. Visio and other programs support you in the design of Mind Maps.



Figure 2: Example of a mind map.

150/(

In this example the topic entries follow the order of the table of contents and are arranged clockwise around the center. Also, the theoretical part is kept on top, while the practical part is arranged below the center. Links to related modules should be placed accordingly. Note the color coding:

Туре	Color sample
Module	rgb(251,82,0)
Theoretical	rgb(35,109,51);
Practical	rgb(178,34,34);
Relation to other modules	rgb(255,204,0)

Table 1: Colors used in Figure 1.

Verbalization of Personal Goals

Course Chapter Name:	<mark>My Goals</mark>
Course Sub Chapter Number:	4

Goal: Let's see what the students expect from us and provide them with anchor points to build their new knowledge from what they already know.

Essay: Students formulate their expectations of the module. It helps to see what students expect from a module before they entered into the topic. It also helps the students to get a feeling of the module and to feel ownership. It also helps to activate their prior knowledge for that topic. This will also be used to track the evolution of the student knowledge and competencies (See the personal synthesis).

You are now invited to formulate your personal expectations from this module. This short essay helps us to see what you expect after reading the module's topic.

When you think about your expectations and goals for this module, you activate your already existing knowledge.

At the end of this module you can compare your own goals with the reached ones.

Evaluation criteria:

You can earn a total of 20 points for this task:

- 4 points for a correct syntax and language

- 16 points for the quantity and the quality of the content

General Quiz Settings: Quiz: - maximal points available: 20

- must be available all the time

- must be exclusively displayed on the respective page in the action menu bar

- must be set to "essay question"

- must not have a time limit

WebCT CE and Vista: please see under 3.1 how to add a quiz.

Module-specific Procedures

Course Chapter Name:	Tips
Course Sub Chapter Number:	5

Goal: Show the differences from the global introduction.

Module Specific Procedures: If there are additional remarks that are not covered by the global introduction they must be in this section.

Module-specific procedures, well known pitfalls...

Frequently Asked Questions

Course Chapter Name:FAQCourse Sub Chapter Number:6

Goal: Provide answers to the reappearing questions.

Each of the modules contains a FAQ section with module-specific problems. It is recommended to pick the questions and answers from the discussion board. The list of frequently asked questions with answers grows with time.

If there are more that 20 questions a search function should be integrated. Till then questions are alphabetically sorted.

FAQ:

Basic Knowledge Acquisition

Course Chapter Name:TheoryCourse Chapter Number:2 (green chapter)

Theory Chapter

Course Chapter Name: Course Sub Chapter Number: Theoretical Basics

The first sub chapter page is generated automatically by the tool.

1

Goal: Provide necessary knowledge for the hands-on session.

Theoretical Basics: Everything that is essential for the laboratory must be mentioned in this section. To remember: The VITELS course is written for students with a strong knowledge in computer science or with a similar technical background.

The theory section must include text, graphics, animations, and should include interactive animations.

Supplementary content, going further than the 15 hours of a module, must be tagged with the above described markers.

A summary of the theory must be provided as a .pdf file.

Readings

Course Chapter Name: Course Sub Chapter Number: <mark>Readings</mark> 2

Goal: The reading chapter makes an excursion to "heavier" literature that is not especially prepared for students.

Readings: There are many intentions behind this chapter. Students get, as in real life much more references as they can work through. But this is intentionally; students have to practice real life, especially in a laboratory. To help students, the reading section is subdivided in the two sections required and recommended readings.

You have now reached the readings section that is subdivided into required and recommended readings.

Required readings are articles taken out of real life, originating from the area of the theory section.

Recommended readings are interesting and fit the theory but are not a must; they are intended for people more interested into the study matter.

With these readings you get used to the style of scientific writting.

It is not easy to read and understand scientific articles. If you start reading with the abstract you get an overview of the work presented. The introduction leads to the presented facts and helps understanding them. The most important section is the discussion. That is where the gained results are brought into context.

Required Readings

Course Chapter Name: Course Sub Chapter Number: Required Readings 2.1

Goal: Minimal readings required for the module understanding.

Required Readings: The readings in this section are a must for everybody because they are essential for the laboratory session. Required readings are not just additional theory texts written by the tutor. Required readings are original essays or publications that match the module topic. The idea behind is to bring students to real life also in theory as the major source of knowledge in the later life are scientific publications. It is recommended to add one long or two short articles.

Students that are very skilled or think they know everything can proceed to the self test. If they solve the self test without any problem, they should go on without the required readings.

Future option: As soon WebCT supports a dynamic set-up of readings, the theory for each student can be based on this tool.

Recommended Readings

Course Chapter Name: Course Sub Chapter Number: Recommended Readings 2.2

Goal: Other readings that would help to deepen the module topic.

Recommended Readings: Recommended means the same as what you do when you recommend a book in your lecture. We recommend that you read this, if you have time or are interested. Text references must be in this section.

Personal Synthesis I

Course Chapter Name: Course Sub Chapter Number: Personal Synthesis I

Goal: Here, students are asked to synthesise what they know or have learned and to organize their knowledge. They must go through their experiences made before and express them in their own words.

3

Personal Synthesis: Take the goals of the module and now write in your own words what you have learned in the theory section. How close are you to the goals?

This is the first out of two personal syntheses you have to write in this module.

The synthesis is an essay about your gained knowledge during the theory chapter. You tell in your own words and thoughts what you experienced and try to link the new with already existing knowledge.

Click on Quiz in the Action Menu at the top and choose Personal Synthesis. You get to the Quiz dialog and then you can start with the essay.

There are no time limitations to this task and you can always come back. Another entry point to this task is via Evaluation on the Navigation Bar on the left hand side.

Evaluation criteria:

You can earn a total of 20 points for this task:

- 4 points for a correct syntax and language

- 16 points for the quantity and the quality of the content

General Quiz Settings: Quiz: - maximal points available: 20

- must be available all the time

- must be exclusively displayed on the respective page in the action menu bar

- can be repeated
- must be set to "essay question"
- must not have a time limit
- tutor Email notification must be set on

WebCT CE and Vista: please see under 3.1 how to add a quiz.

Self Test (formative evaluation) with Links to Sections Related to Wrong Answered Questions

4

Course Chapter Name: Course Sub Chapter Number:

Goal: Helps students to orientate in the theory part and to discover missing parts. Students always get an answer with a further explanation, in the case of a wrong or correct reply.

Self Test

Self Test: The self test immediately provides results and in case of wrong results points to a resource where the missing information can be read. Provide a positive feedback even in case of a correct answer. Self tests are not graded nor reviewed by a tutor. Add at least 10 questions.

The Self Test helps you to decide whether you are ready for the Quiz or not. In case of wrong answers you get links to additional information where you can improve your knowledge. The Self Test is not reviewed. It is for your personal use and benefit only.

Click on Self Test in the Action Menu at the top and start with the test. There are no time limitations to this task and you can always come back.

Evaluation criteria: No points can be earned for this task.

WebCT CE: Self tests are page related and appear in the action menu bar. If the quiz is entered directly into WebCT CE it might disappear after changing page names. It is mandatory to write the quiz in a .txt file with the self test syntax and to upload the file.

Store the .txt file in the folder of module chapter 2.

```
Syntax:

:TYPE:MC

:QUESTION

Which protocols can be used in an IP Sec implementation?

:ANSWER1:0

IP, UDP and TCP

:ANSWER2:0

AH, IKE and SSL

:ANSWER3:0
```

```
SNMP, ESP and TCP
:ANSWER4:100
ESP, AH and IKE
:REASON1
Wrong. The main protocols for an IP Sec implementation are
Encapsulated Security Payload (ESP), Authentication Header
(AH) and Internet Key Exchange (IKE).
:REASON2
Wrong. The Secure Socket Layer protocol (SSL) is not used
within an IPSec implementation. SSL works at higher layer of
the OSI model.
:REASON3
Wrong. The Simple Network Management Protocol (SNMP) has
nothing to do with IPSec as well as TCP.
:REASON4
Exactly. Encapsulated Security Payload (ESP), Authentication
Header (AH) and Internet Key Exchange (IKE) are used with
IPSec. While ESP and AH are mandatory for
                                                        IPSec
                                                   an
implementation, IKE is only used for automatic keying.
WebCT Vista: Self tests are similar to quizzes but the option self test within the
quiz has to be chosen.
For a list of the quiz entries and how to add them please go to the next
paragraph.
```

You have to go to the Assessment tool. Choose Create Assessment. The title is: Self Test (YourModuleName). Type is Self Test. Save and add questions. Now you have to create the questions, one after each other. Choose under create questions. At the end you can add the questions with Add to Assessment. The Self Test appears on the assessments page. If you have finished the quiz, you have to make it available on that page. Now you have to go to the Self Test page in the learning module. When you list all pages in the module you see the options on the right side. Choose Edit Components Action Menu and add the Self Test.

Syntax: Each question has to look like:

[Self Test YourModuleName] QuestionName

Quiz

Course Chapter Name:QuizCourse Sub Chapter Number:5

Goal: Helps tutors to discover missing theory parts or to discover lazy students.

Quiz: The quiz is the final test before proceeding to the lab session. Students have to pass the quiz before they proceed to prove a minimal knowledge and to pass the laboratory session within the estimated time. Quizzes are graded.

If you feel ready for the hands-on session and you are satisfied with your Self Test results, solve the Quiz. The Quiz results will be reviewed and evaluated by your tutor.

You must finish the Quiz before proceeding to the hands-on session!

Click on Quiz in the Action Menu at the top and choose Quiz. You get to the Quiz dialog and then you can start.

There are no time limitations to this task and you can always come back. Another entry point to this task is via Evaluation on the Navigation Bar on the left hand side.

Evaluation criteria:

You can earn a total of 20 points for this task:

- each question gives a certain amount of points

General Quiz Settings: - maximal points available: 20

- must be available all the time
- must be displayed on the respective quiz page in the action menu bar
- can be repeated
- tutor Email notification must be set on

WebCT CE and Vista: please see under 3.1 how to add a quiz.

Knowledge Application/Exploration and Skills Practice

Course Chapter Name: Course Chapter Number:	Knowledge Application/Exploration 3 (red chapter)
Laboratory Introduction	
Course Chapter Name:	Hardware Overview
Course Sub Chapter Number	: 1

The first sub chapter page is generated automatically by the tool.

Goal: Get introduced into the hardware of the hands-on session.

Hardware Overview: The hardware overview introduces the devices used in the hands-on session. Provide all tricks and hints students must know.
Laboratory Work

Course Chapter Name:Hands-on SessionCourse Chapter Number:2

The second sub chapter page is generated automatically by the tool.

Goal: Apply the theory and trial-and-error learning.

Hands-on Session: The laboratory session consists of simulations, emulations or work on real devices. Both types of session should be as close to reality as possible.

- Tracking data or other recorded results of actions
- Possible team work to solve/discuss the hands-on session tasks. The post laboratory work must be done by EACH student independently; else conclusions are not done by both.

The laboratory report, automatic from tracking or else from self-assessment is part of the questions in the final quiz.

Evaluation of Acquired Knowledge/Skills

Course Chapter Name: Course Chapter Number: Prove Your Knowledge and Skills 4 (blue chapter)

Personal Synthesis II

Course Chapter Name: Course Sub Chapter Number: Personal Synthesis II 1

Goal: Students express in own words what they did.

Essay: The task for the students is to write a short essay in which the acquired knowledge must be put together by them. The synthesis should contain reflections on adopted strategies and the observed results. A very simple example: You explain a hammer and nails. The synthesis for the students is now to add hammer and nails together and describe how to drive a nail into a wall. An example: In the theoretical part of the VITELS module IP Security, students learn a lot about virtual private networks (VPN). In the hands-on session they have to apply the knowledge for setting up routers and establish a VPN. Now they should know the theory of VPN and also how to use routers in this context. A synthesis task could be to implement a VPN on a certain link that only routes UDP traffic and nothing else.

The synthesis could be a concept map or a system description in the students' own words. The students could synthesize what they have learned and what they could /should study more deeply.

You are now asked to write your second personal synthesis. The form is again a short essay in which you describe the acquired knowledge made in the hands-on session.

Describe newly adopted strategies and the observed results.

Describe also what you would like to have done additionally for satisfying your personal interest of the module topic.

Click on Quiz in the Action Menu at the top and choose Personal Synthesis. You get to the Quiz dialog and then you can start with the essay.

There are no time limitations to this task and you can always come back. Another entry point to this task is via Evaluation on the Navigation Bar on the left hand side.

Evaluation criteria:

You can earn a total of 20 points for this task:

- 4 points for a correct syntax and language

- 16 points for the quantity and the quality of the content

General Quiz Settings: Quiz: - maximal points available: 20

- must be available all the time
- must be exclusively displayed on the respective page in the action menu bar
- can be repeated
- must be set to "essay question"
- must not have a time limit
- tutor Email notification must be set on in the quiz settings Chose Edit Settings (<u>YourModule@vitels.ch</u> WebCT sends an Email after each received quiz)

WebCT CE and Vista: please see under 3.1 how to add a quiz.

Final Quiz

Course Chapter Name:Final QuizCourse Sub Chapter Number:2

Goal: Analyze what students really understood.

This is the final quiz that is graded. In this quiz, students must prove that they have learned and understood the learning material. Once again, it is not possible to perform this quiz in a team as it is sure that only one student will work on it or do not more than half of the quiz. In this quiz, results of the lab must be considered.

Final Quiz: The final quiz includes log files of the hands-on session. The quiz is a possibility to evaluate your work and to see what you have learned in the module.

In the Final Quiz you reply less theoretical than practical questions. Major parts of this quiz are the results and log files gained and saved during the hands-on session.

This is the last evaluated task of this module. Nevertheless it is also required to fill the module survey.

Click on Quiz in the Action Menu at the top and choose Final Quiz. You get to the Quiz dialog and then you can start.

There are no time limitations to this task and you can always come back. Another entry point to this task is via Evaluation on the Navigation Bar on the left hand side.

Evaluation criteria:

You can earn a total of 30 points for this task:

- each question gives a certain amount of points

General Quiz Settings Quiz: - maximal points available<mark>: 30</mark>

- must be available all the time

- must be exclusively displayed on the respective page in the action menu bar

- cannot be repeated

- tutor Email notification must be set on in the quiz settings Chose Edit Settings (<u>YourModule@vitels.ch</u> WebCT sends an Email after each received quiz)

WebCT CE and Vista: please see under 3.1 how to add a quiz.

Survey

Course Chapter Name:SurveyCourse Chapter Number:3

Goal: Get an impression of students' experiences and equipment.

Survey:

This survey helps us to adapt and improve this module. Please fill out all the fields.

Evaluation criteria:

You can earn a total of 5 points for this task:

- each not answered question reduces the total points by 1

Quiz: - maximal points available <mark>: 5</mark>
- must be available all the time
- must be displayed on the respective page in the action menu bar
- can be repeated
- use the existing survey questions for your module and distribute the points so that you get 5 totally.
- tutor Email notification must be set on in the quiz settings
Chose Edit Settings (YourModule@vitels.ch WebCT sends
an Email after each received quiz)

WebCT CE and Vista: please see under 3.1 how to add a quiz.

3.4Evaluation of the Course by the Students

The VITELS course is a heterogeneous construct realized in a common framework. One part of that framework is the VITELS feedback form that is used by all partners in the case the integrated survey are omitted (not recommended).

The purpose of the form is to gather technical as well as personal experiences students make during the course.

The VITELS experience report and feedback form is in Appendix A.

In the electronic implementation of the course we use the Survey tool offered by WebCT.

This summarized activity list for module designers list all the necessary tasks to achieve a module. It does not replace the necessary task of reading through the guide and following the detailed instructions found there.

This memo consists of two parts: a list of general recommendations that the module designer should respect when creating his module and a detailed list of the required activities.

General recommendations (they are derived from section 4 of the guide, the list is not complete!)

When you prepare your module's content you should follow certain rules of good design.

- 1. Keep your content short and simple
- 2. Limit the numeration hierarchy of the Table of Contents entries (recommended depth of 3, maximum 4 numbers)
- 3. Limit the number of different font families and formats per page (maximum 3)
- 4. Limit the amount of different colors per page (maximum 5)
- 5. Reuse font formats and colors in the same context
- 6. Links should always be opened in a new window
- 7. Figures should be numbered and should have captions

Especially when creating graphics or animations try to apply these rules:

- 1. Respect the maximum width of 540 pixel in your graphic/animation
- 2. Use color selective (emphasize key elements, keep the surroundings black/white/grey)
- 3. Use light, appealing colors (not too dark or somber)
- 4. Limit the amount of gradients
- 5. Use the JPEG format for real-life images (photographs, paintings, etc.) and the PNG format for computer generated graphics (charts, flows, diagrams etc.). Do NOT use the GIF format!

4 Module Design in a Nutshell

Task	File to fill in the ffgf framework
Write the table of contents of the module. This is a very important step and you should not be required to change the ToC once it is generated although it is not impossible. You can only write the ToC if you have outlined your module content already before.	Start ffgf and fill in the ToC
Write the content of " <mark>Welcome</mark> "	ffgf/output/content/Mod ulename/1/1_1_welcome. cont
Write the content of " <mark>Goals and how to Reach</mark> Them"	ffgf/output/content/Mod ulename/1/1_2_schedule. cont ffgf/output/content/Mod ulename/1/1_2_the_goals _and_how_to_reach_Them .cont
Write the content of " <mark>Module Vicinity</mark> " (the vicinity map is provided by the course framework, you have to write the Mindmap.	ffgf/output/content/Mod ulename/1/1_3_module_v icinity.cont
Write content of the " <mark>Tips</mark> "	ffgf/output/content/Mod ulename/1/1_5_tips.cont
Write the content of the "Module Specific FAQ"	ffgf/output/content/Mod ulename/1/1_6_faq.cont
Write the "Theoretical Basics" section. This requires filling the different subsections that were defined in the module's table of contents. Remember that the ffgf prepares one file per item defined in the table of contents (i.e. subsection/subsubsection)	ffgf/output/content/Mod uleName/2/2_1_*.cont
Write the summary of the theory (you have to integrate this in the ToC as a subsection of the Theoretical Basics)	ffgf/output/content/Mod uleName/2/2_1_*.cont
Write the content of " <mark>Required readings</mark> "	ffgf/output/content/Mod uleName/2/2_2_1_require d_readings.cont

Task	File to fill in the ffgf framework
Write the content of " <mark>Recommended Readings</mark> "	ffgf/output/content/Mod uleName/2/2_2_2_recom mended_readings.cont
Write the question of the "Self Test"	
The quiz must be written in a .txt file following a well defined syntax. Then, it must be integrated in WebCT.	
Write the questions of the "Quiz"	
The quiz questions must be written in a .txt file following a well defined syntax. Then, it must be integrated in WebCT.	
Write the content of the "Hardware Overview"	ffgf/output/content/Mod uleName/3/1
Write the content of the "Hands-on Session"	ffgf/output/content/Mod uleName/3/2*
Write the quiz of the "Final Quiz"	
Add entries to the glossary	

5 Design

5.1 Motivation

The didactic aspects of chapter 2 give the course a common set of rules that define how the content must be prepared and presented. But the course must also have a common design (remember the corporate design).

5.2WebCT CE

5.2.1 Settings

The VITELS course is hosted on a WebCT CE and Vista system. WebCT allows global and page-related settings. Global settings must not be changed! Individual settings must be according to chapter 3.

5.2.2 Folders

You must not touch any file or folder that is not yours.

The common language for folders and files is English.

Directory Structure in WebCT:

My_Files/design: common design setting *My-Files/general_introduction_and_faq:* common introduction to all modules *My-Files/pictures:* Pictures used in the whole course, icons of the homepage, reservation system icons *My-Files/scheduling:* Laboratory reservation system folder

My-Files/(coursemodulename): Each course module has a folder according to the name of the module. The folder must be easily brought into context with the title of the module.

In the course module folders, it is recommended to create subfolders for each chapter and one for pictures.

System folders:

My-Files/chat: Logs of the chat rooms

My-Files/student_pres: Uploaded files from students and their presentations *My-Files/whiteboard:* Saved whiteboard sessions

5.3Implementation

5.3.1 Principles

To achieve a common design throughout a course, all modules belonging to this course need to use common design rules. To allow changes and updates of these rules without affecting the module creators, an easily maintainable file structure is required. Therefore, the design rules and the content of a page have been separated.



Now, module creators only need to edit the content, they won't have to care about the overall design. Nevertheless, every module creator has to use the same set of XHTML tags when she/he writes the content.

5.3.2 Content File

The content file contains all that should be displayed on a single page. The language to be used by the module creator for the content file is XHTML. XHTML is an extension to HTML 4.0, with stricter rules. The difference to HTML 4.0 in short is that all tags must be closed. The following XHTML tags may be used by the module creator:

Text:

 <pre></pre>	Paragraph Forcing a line break Preformatted text
Lists:	
 	Unordered list Ordered list List item
Tables:	
	Table element Table row Table cell

<h2></h2>	Header element
<a>	Link element
	Image element
<div></div>	Grouping element (block-level)
	Grouping element (inline)

5.3.3 Available CSS Classes

The use of cascading style sheets (CSS) classes ensures the common design and is therefore recommended. To emphasize certain words or phrases, the format of the text can be changed. The following table lists the available font classes with a sample text. Note that the standard font family is set to a sans-serif and the standard font size to small.

CSS Class Name	Sample text
left	This class provides left justified text. This class provides left justified text.
center	This class provides centered text. This class provides centered text.
right	This class provides right justified text. This class provides right justified text.
justify	This class provides justified text. This class provides justified text.
monospace	This class provides monospaced text. This class provides monospaced text.
serif	This class provides serif text. This class provides serif text.
medium	This class provides medium sized text. This class provides medium sized text.
small	This class provides x-small sized text.
italic	<i>This class provides italic text. This class provides italic text.</i>
monospaceItalic	This class provides monospaced italic text. This class provides monospaced italic text.
bold	This class provides bold text. This class provides bold text.

noindent	• This class provides a shorter indention and justified text for unordered () and ordered lists ().
li.answer	• This class provides a formatted list item to be used for answers (e.g. in the FAQ).
li.question	• This class provides a formatted list item to be used for questions (e.g. in the FAQ).

The following classes are to be used with lists and list items:

The following classes are to be used with figures and captions:

figure	• This class provides a 5px wide padding frame. The padding on the bottom is only 3px to better show the connection with the caption.
div.caption	• This class provides a 5px wide padding frame and centered text. The padding on the top is only 2px to better show the connection with the caption.

To group text within the same context (e.g. numbers), different colors and/or fonts can be used. The following table lists the available font color classes with a sample text:

CSS class name	Sample text
green	This class provides green colored text over a transparent background.
maroon	This class provides maroon colored text over a transparent background.
navy	This class provides navy colored text over a transparent background.
purple	This class provides purple colored text over a transparent background.
boldGreen	This class provides bold, green colored text over a transparent background.
boldMaroon	This class provides bold, maroon colored text over a transparent background.
boldNavy	This class provides bold, navy colored text over a transparent background.
boldPurple	This class provides bold, purple colored text over a transparent background.
monospaceBoldBlack	This class provides monospaced, bold, black colored text over a transparent

	background.
monospaceBoldGreen	This class provides monospaced, bold, green colored text over a transparent background.
monospaceBoldMaroon	This class provides monospaced, bold, maroon colored text over a transparent background.
monospaceBoldNavy	This class provides monospaced, bold, navy colored text over a transparent background.
monospaceBoldPurple	This class provides monospaced, bold, purple colored text over a transparent background.

To further ensure the common look, some CSS classes for special purposes have been provided:

CSS class name	Sample text
code	
	This class provides a purple framed, monospaced, black text over a light purple background. The text is rendered as given in the HTML source with all leading and trailing spaces.

5.4Content Design Rules

When you prepare your module's content you should follow certain rules of good design.

- 1. Keep your content short and simple
- 2. Limit the numeration hierarchy of the Table of Contents entries (recommended depth of 3, maximum 4 numbers)
- 3. Limit the number of different font families and formats per page (maximum 3)
- 4. Limit the amount of different colors per page (maximum 5)
- 5. Reuse font formats and colors in the same context

Especially when creating graphics or animations try to apply these rules:

- 1. Respect the maximum width of 540 pixel in your graphic/animation
- 2. Use color selective (emphasize key elements, keep the surroundings black/white/grey)
- 3. Use light, appealing colors (not too dark or somber)
- 4. Limit the amount of gradients
- 5. Use the JPEG format for real-life images (photographs, paintings, etc.) and the PNG format for computer generated graphics (charts, flows, diagrams etc.). Do NOT use the GIF format!

When you need to place section titles (i.e. the mandatory sections) within your page you should use the <h2> tag, e.g.

<h2>Special Requirements</h2>

You should write your standard text within paragraphs, as shown in the following sample code:

This is a short sample sentence. This is a long sample sentence. This is a short sample sentence. This is a long sample sentence.

All elements in the content file are justified per default. If you want to change the alignment of your elements, you should use an appropriate class, e.g.

This short sample sentence will be aligned to the left. This long sample sentence will be aligned to the left.

If you want to change the format of your text within a paragraph, you should use the tag, e.g.

In this paragraph the font weight will be changed. This is done using the tag. This word will be rendered with bold letters.

Links should always be opened in a new window to not risk the invalidation of the current WebCT session. To achieve this, the parameter target should be set to _blank, e.g.

Have a look at the recommended and required Readings of this module.

For command lines you should use a monospaced font, e.g.

 ifconfig eth0 10.1.1.1 255.255.255.0

All figures (e.g. pictures, flash animations) must be numbered and should have captions to indicate their meaning and place them in the right context. The figure should be placed within centered div tags and the caption should follow immediately afterwards, e.g.

```
<div class="center">
<img class="figure" src="../pictures/visualization.png">
</div>
<div class="caption">Figure 2.1 – Visualization of something</div>
```

To display code snippets, you should use the preformatted text tag together with the code class, which will cause the browser to render a frame around your code and format the text properly, e.g.

```
while( true ) do
{
nothing
}
```

When you list question and answers in a collection (i.e. the FAQ chapter) you should use the unordered list tag with the appropriate class for each list item, e.g.

```
What time is it?
```

```
class="answer">It's 10 o'clock.class="noindent">class="noindent">Where do I start?Right here.
```

5.5Adaptation of Existing Modules

To ease your adaptation work a small utility (file framework generator & formatter – ffgf) is provided. The ffgf takes a Table of Contents as input and translates it into a numbered and formatted framework of files. It contains a template of a Table of Contents based on this guide, which should give you a good starting point to easily adapt the structure to the one of your module.

5.5.1 Installation of the ffgf

It is necessary to work on a system with installed Perl functionality. A free Perl version for Windows can be found at <u>www.activestate.com</u>. For further information about Perl refer to <u>www.perl.org</u>.

Unzip the archive into a directory of your choice. After unpacking the archive you find the following directory structure:

ffgf/	start scripts and readme
ffgf/etc/	configuration and template files
ffgf/input/	input files (Table of Contents)
ffgf/output/contrent	generated content files
ffgf/output/htmlCE	generated HTML files for WebCT CE
ffgf/output/htmlVista	generated HTML files for WebCT

Vista

5.5.2 Usage of the ffgf

The common sequence of operating the ffgf is as follows:

- Enter the directory ffgf
 cd ffgf
- 2. Edit the Table of Contents file. the name used for this file is the named used by the tool for the generation of the module's file, so take care to use the correct name with lower and upper case letters. You may use spaces and underscore in the file name.

ffgf/module_name.txt

3. Run the ffgf.pl script

ffgf.pl

4. Use the menu to edit the content files. Each time the table of contents is changed, the HTML fils are generated accordingly.

Below each step is explained in detail.

Enter the ffgf directory

It is required to execute the Perl script within the directory ffgf due to the files processed.

cd ffgf

Edit the Content Files

Before you start the ffgf, you should adapt the table of contents to match your module. This can be done easily by editing an example of table of contents available at the input directory. However, it is necessary to rename the file to the name of your module.

input/module_name.txt

A section entry in the Table of Contents file consists of a section number and a section title separated by a colon (":"). As follows (without the <>):

<section entry> := <section number>:<section title>

The section number consists of one or more digits separated by a dot ("."). The section title has no special format.

Note that only one section entry per line is permitted. Each section entry must have a preceding and numerically matching chapter. The entry of a chapter is similar to a section entry, apart from an additional parameter indicating the chapter duration in minutes. Also, the chapter number must not contain any dots. As follows (without the <>):

<chapter entry> := <chapter number>:<chapter title>:<chapter duration>

Of course, the chapter and section entries must be sorted ascending by their section number (like any other Table of Contents).

Here is an example of some valid chapter and section entries:

- 1 : First chapter:40
- 1.1 : First subsection
- 2 : Second chapter:120

Here is an example of some incorrect chapter and section entries:

1.1 : First subsection !
2 : Second chapter:120
3.1 : Third subsection !!
4 : Fourth chapter !!!

! missing preceding chapter, e.g. "1 : First chapter:40"

!! missing preceding chapter, e.g. "3 : Third chapter:120"

!!! missing chapter duration, e.g. "4 : Fourth chapter:180"

Note: Make sure there are no trailing spaces at the end of a section entry (i.e. after the section title or the chapter duration).

When you have completed the Table of Contents you can proceed to the file generation.

Run the ffgf.pl Script

Start the script ffgf.pl

under Windows double click the ffgf.pl script under UNIX execute

./ffgf.pl

The script starts and displays information about its progress. Its primary action is to ask you, which module you want to edit. In our example, we have two modules, and the program asks as follow:

(1)- input/IEEE 802.11 and 802.11i.txt(2)- input/teste_novo.txt

Choose a file, please:

After choosing a file, the program analyzes the ToC file in order to check its consistency. If it finds any errors, it will present the line with the problem and asks for editing the ToC file.

(1)- input/IEEE 802.11 and 802.11i.txt(2)- input/teste_novo.txt

Choose a file, please: 1 Module name: IEEE 802.11 and 802.11i

Getting ToC data: Done. Phase 1 (preprocessing):Done. Getting ToC data: Done. Verifying ToC data: ..

-> At line: "1.3 : Test with error" has a chapter number out of order!

You should edit the ToC to correct the error! Press <ENTER> to edit the file! After executing successfully, it presents a menu explained below. When the script finishes you can find the resulting files in the following three directories:

ffgf/output/content/module directory name/ ffgf/output/htmlCE/module directory name/ ffgf/output/htmlVista/module directory name/

The content directory contains the content files which are inserted into the HTML files located in the html* directories. Two types of content files exist, non-static and static. The non-static content files are created by the script, edited by the user and will never be overwritten by the script. Two HTML directories exist, htmlCE contains WebCT CE compliant HTML files and htmlVista contains WebCT Vista compliant HTML files.

For every chapter a sub-directory has been created and the files for the section entries have been placed accordingly.

ffgf/output/*/module directory name/1/ ffgf/output/*/module directory name/2/ ffgf/output/*/module directory name/3/ ffgf/output/*/module directory name/4/

In a chapter directory you either find content files (named <section_entry>.cont) or HTML files (<section_entry>.html).

The following static content files contain predefined text from the VITELS Guide and will always be overwritten by the script.

1/1_4 * my_goals.cont 2/2_2 * readings.cont 2/2_3 * personal_synthesis.cont 2/2_4 * self_test.cont 2/2_5 * quiz.cont 4/4_1 * personal_synthesis.cont 4/4_2 * final_quiz.cont 4/4_3 * survey.cont

The following static content files contain text generated by the script and will always be overwritten by the script.

1/1_0 * introduction.cont

2/2_0 * theory.cont 2/2_1 * theoretical_basics.cont 3/3_0 * knowledge_application_exploration.cont 3/3_2 * hands_on_session.cont 4/4_0 * prove_your_knowledge_and_skills.cont

Using the menu

When the module had been select, a menu will be displayed

Options:

(G)- Generate HTML (E)- Edit/View files (Q)- Quit Your choice:

The option "G" is somehow useless, as the HTML pages will be generated each time the scripts detects a change in the ToC or in any content file. However, it is available for sanity.

The hidden option "O" will display all the information it has about your operation system. How to change this option is explained later. The Windows example:

Your operating system information: MSWin32 Your options: edMSWin32: notepad browserMSWin32: start copyMSWin32: copy moveMSWin32: move

The option "Q" exits the script.

Finally, the option "E" leads to a sub-menu with other options, as exemplified

Editing/Viewing:

(T)- Edit ToC: "input/IEEE 802.11 and 802.11i.txt"
(1)- Edit/View "1 : Introduction:40"
(2)- Edit/View "2 : Theory:410"
(3)- Edit/View "3 : Knowledge Application/Exploration:390"
(4)- Edit/View "4 : Prove Your Knowledge and Skills:60"

(C)- view all htmlCE contents(V)- view all htmlVista contents(M)- back to main menu

Your choice:

The "T" option allows you to edit the table of content file.

The "C" and "V" option presents a web page in your browser with all the contents. It is possible to print or generate a PDF file from this file. "C" presents the WebCT CE output HTML, and "V" will present the WebCT Vista.

All numbered options lead to a sub-sub-menu as an example shown with the "1" option:

Editing/Viewing "1 : Introduction:40": (1)- Edit "1 : Introduction:40" (2)- Edit "1.1 : Welcome" (3)- Edit "1.2 : The Goals and how to Reach Them" (4)- Edit "1.3 : Module Vicinity" (5)- Edit "1.4 : My Goals" (6)- Edit "1.5 : Tips" (7)- Edit "1.6 : FAQ"

(C<number>) - to view the HTMLCE page of chapter <number> (V<number>) - to view the HTMLVista page of chapter <number> (B)- back to previous menu (M)- back to main menu Your choice:

If you choose any numbered option, it edits that content file, allowing you to change whatever you might need. To see the resulting HTML page just press "C<number>" or "V<number>" for WebCT CE or Vista, respectively. For example, "C3" for viewing in your browser the page of "1.2 : The Goals and how to Reach Them".

When populating your content files, you should use XHTML as the format for the content file. Since the HTML header, the page title and the overall page format is generated by the script when creating the HTML files, you can start right with the text and/or images:

No title, e.g. <h1>, is needed, since it will be generated by the ffgf.

5.5.3 Configuration of the ffgf

The ffgf can be configured by editing the file

etc/ffgf.conf

This file mainly contains the options for a specific operation system. To understand how to use those options, one must understand how it works.

The script must know the following commands for each operation system:

Editor Browser Copy Move

However, there must be a relation with the operation system. To do so, Perl allows the use of the following format

<command><operation_system>="<real_command>"

The <command> can be *ed* (for editor), *browser*, *copy* or *move*. The operation system must be the string that Perl uses to classify your Operation system. To get this string, one must use the "O" hidden option available at the main menu. The <real_command> is the command used in your operation system to execute the specific command. Examples follow,

edMSWin32=notepad edlinux=vi (or) edlinux="pico -w" browserMSWin32=start browserlinux=netscape (or) browserlinux=elinks (or) browserlinux=lynx

5.6WebCT CE Integration

5.6.1 Preparation & Indexing

When you want to upload your files into WebCT CE you should zip all the files and directories in your module's HTML directory for WebCT CE

ffgf/output/htmlCE/module directory name/*

After uploading the file into WebCT CE and unzipping it in the root course directory you can simply start to index the HTML files into the Table of Contents of your module "Add file". As the file name contains the section number, the order of your Table of Contents will be correct when you start with the upper most file of your module and continue downwards. It is also possible to index multiple files at once, e.g. indexing files belonging to the same section. You only need to correct the indentation of the entries.

5.6.2 Customization of the Table of Contents in WebCT

To also apply the common design to the Table of Contents of your module the following steps are required:

- 1. On the Table of Contents page of your module select "Designer Options"
- 2. In the right frame of the window under "Actions" click "<u>Edit Content</u> <u>Module Settings</u>"
- 3. At the bottom of the page under "Page numbering" select "Hidden" and click "Update"
- 4. At the bottom of the right frame of the window under "Customize Table of Contents" select "Edit/Add upper textblock" and click "Go"
- 5. Paste the following code into the text field and click "Update":

k rel="stylesheet" href="/_COURSEID_/design/VITELS_style.css" type="text/css"/>

<body class="lightgray">

- 5. In the right frame of the window select "Edit/Add lower textblock" and click "Go"
- 6. Paste the following code into the text field and click "Update":

</body>

6 References

- XHTML 1.0 <u>http://www.w3.org/TR/xhtml1/</u>
- HTML 4.01 <u>http://www.w3.org/TR/html401/</u>
- CSS 2 <u>http://www.w3.org/TR/REC-CSS2/</u>
- JPEG <u>http://www.w3.org/Graphics/JPEG/</u>
- PNG <u>http://www.w3.org/Graphics/PNG/</u>

Mind Maps

http://members.ozemail.com.au/~caveman/Creative/Mindmap/

Presenters Online

http://www.presentersonline.com/training/train_bigindex.html

Inspiration <u>http://www.inspiration.com/home.cfm</u>

7 Appendix

ETA-6709 Étapes proposées pour la création d'une carte conceptuelle

par Jacques Viens

Plusieurs méthodes peuvent permettre de réaliser une carte conceptuelle. Nous vous proposons ici une technique qui s'apparente aux premières étapes de la construction de modèles mentaux proposées par Gentner & Stevens (1983).

1. Énumérer les concepts importants.

Énumérer tous les concepts qui viennent à l'esprit, ne pas discriminer.

Analyser la liste et voir si des concepts importants manquent.

2. Établir des relations entre les concepts.

Trois types de relations permettent de regrouper les concepts:

. location (temps et espace)

. partie/tout (est une partie de, possède)

. **inclusion de classe** (est une sous-catégorie de, contient la sous-catégorie)

D'autres relations peuvent mieux représenter d'autres liens :

. de caractéristiques:

. partage des caractéristiques avec

. est différent de

. d'actions:

.influence/est influencé par.origine de/mène à.synthétise/est synthétisé par

Il faut essayer de relier les concepts et d'établir des relations entre eux. On peut se poser des questions comme: qui fait partie de quoi? Qui influence quoi? Sous quelles conditions? Il peut être utile de regrouper les concepts sous différentes structures. <u>Rappelez-vous qu'il n'y a pas de structure idéale, seulement des points de vue et des niveaux d'analyse différents sur les concepts</u>.

3. Organiser une première version de la structure.

Certains concepts seront faciles à regrouper, d'autres seront plus difficiles. C'est souvent en relation avec le point de vue que vous adoptez lors de l'analyse des concepts. Essayez de changer de point de vue ou de perspective pour identifier de nouvelles relations entre les concepts. Deux stratégies peuvent être explorées: 1. organiser d'abord les concepts en petits groupes pour ensuite passer à un niveau d'organisation plus général, 2. organiser d'abord le cadre de référence général en prenant les concepts les plus englobants et, par la suite, préciser les relations avec les autres concepts à un niveau plus détaillé.

Ne vous en faites pas, créer une carte conceptuelle est un travail difficile qui demande une certaine période d'exploration.

4. Évaluer les structures résultantes et le modèle général.

On peut se poser les questions suivantes:,

- 1-La carte conceptuelle est-elle compréhensible?
- 2-En résulte-t-il un cadre de référence cohérent?
- 3-Les concepts importants sont-ils tous présents?
- 4-Les relations importantes sont-elles identifiées?
- 5-La présentation visuelle est-elle attirante? trop lourde? trop complexe?
- 6-Que pourrait-on changer pour améliorer la carte conceptuelle?

Vérifier les perceptions des autres étudiants et bien sûr,

5) Modifier la carte conceptuelle en fonction des résultats

La révision de la carte s'opère sur plusieurs cycles. Nous raffinerons la carte tout au long de la session. Idéalement, vous devriez <u>terminer avec en votre</u> <u>possession</u>: A) Une série de groupes de concepts organisés en une ou plusieurs

structures.

B) Un court texte (1 page) exposant le rationnel de votre carte conceptuelle.

C) Vous pouvez ajouter:

- a) des définitions de certains termes
- b) des synonymes
- c) des images
- d) des conditions éclairant certaines relations

N.B. Lorsqu'on produit la carte dans un environnement informatisé interactif comme Supercard, des boutons interactifs, des textes et des images peuvent enrichir la présentation de votre carte conceptuelle.

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