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IMM EU Socrates Erasmus Programme
Master programme
Sylabus

Course Title: Multimedia Programming
Proposed by: Markus Seidl, Bakk.
Institution: University of Applied Sciences St. Pölten
Country: Austria
Email: markus.seidl@fh-stpoelten.ac.at

Please also attach a CV to this course proposal.

Purpose	The goal of this course is to enable students to make decisions about which multimedia programming tools they have to utilize for a certain purpose, and to gain hands-on experience with two exemplary tools.
Learning Outcomes	After this course, the students will … • … know which tools for multimedia programming are existing. • … be able to decide which tool should be used for which purpose. • … be able to implement simple multimedia applications. Although the buzzword "Web 2.0" should be avoided, the programming of a "MashUp" (i.e. the utilizing of one or more Web APIs of large scale services to create a new one) can be one of the practical examples.
Course Summary	In the wide field of multimedia programming, this course targets screen-based multimedia with a focus on web-based solutions.

Course Structure	*In this section, the content structure of the course is described. The didactic concept and the assigments are lined out in the next section.*
	
	1) Multimedia programming introduction
	  o History of multimedia programming
	  o Fields of multimedia programming
	  ▪ CD/DVD ROM
	  ▪ DVD Video
	  ▪ Game consoles
	  ▪ PC Games
	  ▪ Interactive installations
	  ▪ PC- and screenbased applications
	  ▪ Web based applications
	  ▪ …
	2) Tools for multimedia programming

<table>
<tr><td></td><td>

Adobe Director
Adobe Flash
Java MF
Processing
Web programming

Client side: JavaScript, Flash, SVG, …
Server side: ASP, PHP, CGI, Java, ….

C/C++
…

3) Exemplary Tools

Flash: Client side Web programming, CD / DVD Rom Programming, Keyframe based.
Processing: Java based multimedia programming with a variety of possibilities for e.g. mobiles and external hardware.

4) Final Project
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<tr><td>Learning Assignments</td><td>
In this section, the didactic structure of the course as well as some learning assignments are described.

The course will be held in a framework of 13 course weeks.

<table>
<tr><td>Week</td><td>Course contents and assigments</td></tr>
<tr><td>1</td><td>Face2Face Session
Lecture about Content Chapters 1 and 2
Assignment for self study, to be solved in groups of 2-3 students:
“Through literature (web) research, find out which of the tools are ideal for which purpose. In addition to the tools and purposes presented in the lecture, find at least two new tools and two more purposes. Present your results in a table. Discuss with your group colleagues in the forum.”
Each small group of students has a wiki and a forum for this assignment.</td></tr>
<tr><td>2</td><td>Remote Session
Assignment for self study, groups are the same as in the assigment in week one. The wikis of the groups are commented by the trainers. After this the wikis and the forums are opened for all course memebers.
“Have a look at the wikis and forums of the other groups and improve your table in your wiki with the results of the other groups. Use the appropriate thread in the main forum to discuss with the other course members.”</td></tr>
<tr><td>3</td><td>Remote Session
Flash: Tutorial 1 for self study
Assignment: “Finish the tutorial and upload the resulting files.”</td></tr>
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<tr><td></td><td><table>
<tr><td>4</td><td>Remote Session
Flash: Tutorial 2 for self study</td></tr>
<tr><td>5</td><td>Remote Session
Flash: Tutorial 3 for self study</td></tr>
<tr><td>6</td><td>Remote Session
Processing: Tutorial 1 for self study</td></tr>
<tr><td>7</td><td>Remote Session
Processing: Tutorial 2 for self study</td></tr>
<tr><td>8</td><td>Remote Session
Processing: Tutorial 3 for self study</td></tr>
<tr><td>9</td><td>Remote Session
• Web 2.0: Definitions and Examples
• MashUps
• flickr API (http://www.flickr.com/services/api/)
• YouTube API
(http://www.youtube.com/dev_docs)</td></tr>
<tr><td>10</td><td>Remote Session
Final Project Concept:
“Write a concept for an application that uses user input to upload, fetch, remix and show data from flickr and youTube.
The data you show can either bei the image / video data or accumulated and interpreted metadata (e.g. (number of) topics, users, hits, keywords, ….). For this purpose, you can either use Flash or processing. With processing, use your webcam for user input of image data and/or application control.”
The concepts are evaluated by the trainers and after approval the students can start with the implementation.</td></tr>
<tr><td>11</td><td>Remote Session
Final Project implementation
During the implementation phase a forum for technical questions is open and questions are answered by the trainers and tutors on a daily basis.</td></tr>
<tr><td>12</td><td>Remote Session
Final Project implementation</td></tr>
<tr><td>13</td><td>Face2Face Session:
Presentation of the projects</td></tr>
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<tr><td>Tutorials Structure</td><td>One exemplary tutorial is described here:
The tutorial for course week three, Flash basics, is a tutorial that guides step by step through the main concepts and functions of Flash.
It is a PDF Document with Screenshots of the interface.
Throughout the tutorial, one example including all basic concepts and functions of Flash is finished. Already skilled users can finish the tutorial faster, as for each section a short description of what will be accomplished is given.</td></tr>
<tr><td>Interactive or</td><td>A large variety of examples for Flash and processing.</td></tr>
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Multimedia content	
Software needed	**Software:** Adobe Flash professional 8 (http://www.adobe.com/products/flash/flashpro/) Processing with all external libraries (http://processing.org) and the JMyron webcam library (http://webcamxtra.sourceforge.net/) **Hardware:** Webcam **Prerequisites of the Students:** Basic Java Knowledge Basic Knowledge of Internet technologies: XHTML, CGI, XML, Webservices, XML RPC, ….
References	Flash product page: http://www.adobe.com/flash Flash tutorials from Adobe: http://www.adobe.com/devnet/flash/ Blended learning Flash programming course held by the author: http://ecampus.fh-stpoelten.ac.at Flash example files and tutorials: http://www.actionscript.org http://www.flashkit.com http://www.ultrashock.com Processing: http://processing.org Processing external libraries: http://processing.org/reference/libraries/ Processing examples: http://processing.org/learning/ JMyron webcam extra: http://webcamxtra.sourceforge.net/ Web 2.0 material from the author: http://ecampus.fh-stpoelten.ac.at Flickr API: http://www.flickr.com/services/api/ YouTube API: http://www.youtube.com/dev_docs