How to teach coding and functionality design

Coding and Web Design

Main Issue:	Teaching coding, mark-up languages, styling and system design principles to students with a non-technical background.
	This tipsheet is a recommendation derived from point n°8 of the State Of The Art report (the ten tips guide, p. 17): "Teaching code should be generalized so students have more autonomy. Collaboration with IT students must be encouraged. Such wish was clearly expressed by many schools."

Website: http://fspac.ubbcluj.ro/jurnalism/

Courses:	Study program:	Level:	Students
Web Design	Media Communication	Master	20
Online Communication	Journalism	Bachelor	100

Keywords: coding HTML and CSS, web design, functionality, production, web content management

Short description: The main focus of this tipsheet is on teaching web design and web content management to journalism students.

Web design skills are increasingly required on the job market, but due to the skill mix required to teach and learn web design, computer science/engineering study programs tend to focus on programming for the web and communication/arts study programs tend to focus on visual design. A proper understanding of web design principles in the context of the widespread use of content management systems is key to allowing students to have the creative freedom needed to develop their ideas. By using free open source web content management systems for the development of web projects, this approach encourages students to explore and understand contemporary web design by consolidating knowledge and analytical skills and complementing them with practical skills required on today's job market.

To do	Topic	Teaching method
Teach in the context of a clearly defined live web project	Coding HTML and CSS	Focus on structures and principles. Use simple, freely available tools that highlight syntax like Notepad ++ for writing and editing code.
Teach students how to read, understand, and edit code rather than write it	Coding HTML and CSS	Explore / inspect dynamically generated web pages with browser developer tools. Edit HTML templates / CSS of web content management systems
Teach students how to use and combine existing modules/plugins/ functionalityfrom scratch	Web Content Management Systems	Use of open-source web content management systems: Wordpress, Joomla, Drupal etc. Explain the difference between static and dynamic web sites. Discuss the components of a web content management system, the market share, strengths and weaknesses of the most popular open-source WCMS.
Draw the line between content production and content aggregation	Production	Emphasize on the difference between sites that only aggregate content and content producers and distributors in correlation with their success on the market. Use examples selected from the websites the students are likely to follow.
Teach students how to quantify the success of their project	Production	Show students examples of great looking web sites with poorly designed functionality, or poor quality content, or web sites with great content that might be neglected due to poor design. All three elements are important and this should be made clear right from the start.
Teach students to be able to retrace their steps at any point when editing code	Coding HTML and CSS	Trial and error approaches are central to coding or editing code. Show students how to organize their editing in such a way that they can always undo the changes they've made in the code. Always keep copies of different versions of the HTML and CSS files they are working with. Show students how to comment in the code.

To avoid	Topic	Why?
Avoid pointing towards single solutions in the development of web projects	Web Content Management	Students who think there is always one single right way of doing things will have trouble coming up with solutions.
Avoid using institutional hosting and subdomain names for live projects	Web Content Management	Institutional administrators usually impose restrictions on applications running on servers for security purposes or on content published on subdomains associated with the institution. This hinders experimenting with different WCMS and plugins or some niche contents that might.

To avoid	Topic	Why?
Do not emphasize the success of major players in the field	Web Design and Production	Students have limited resources and may want to do something beyond their resources and fail in accomplishing the task.
Do not expect students to learn coding syntax, but rather to be able to find information on it when needed	Coding HTML and CSS	Having to learn information that is not immediately useful and that is easily available online might deter students. Nobody designs websites without a working internet connection and implicitly immediate access to information about syntax when needed.
Do not encourage students to give up their aesthetic values exclusively for functionality	Web Design	Their end result may be a very functional, but a aesthetically displeasing product that has very little chance of becoming popular on the market

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OPEN QUESTIONS / DISCLAIMERS

Teaching actual programming to students with a background in journalism or philology is not very likely to happen as long as these students lack the knowledge of basic mathematical concepts in Algebra, Geometry, Graph Theory, etc. How far can a web project go solely through functionality and template customisation done by editing HTML, CSS and combining plugins?

Recommended resources / tools	Topic / Learning outcome
http://www.w3schools.com/	Teaching HTML and CSS
http://notepad-plus-plus.org/	Lightweight editing of HTML and CSS documents with syntax and structure highlighting.
http://wordpress.org/ http://joomla.org/ http://drupal.org	Free open-source general-purpose web content management systems. Differences between these three and also others should be noted.
http://useit.com	General pointers, tips and tricks regarding navigability and usability, web site structure and efficiency (Jakob Nielsen)

Contact:

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Bonus material:

Short quote from instructor

"Teaching coding to journalists should be project-based and focused on problem solving through information seeking (i.e. searching the Web and reading plugin documentation or issue threads on community forums), editing and customisation, rather than building from scratch.
The greatest challenges are perhaps convincing students they should not shy away from the "trial and error" approach and making them aware of the advantages of computational thinking."

Teaching environment:

Testimonial from a student

"Overall, the experience has been an enjoyable one, offering me the possibility to apply and develop my web design skills, and contrary to initial expectations, even some PHP coding ones. The effort did prove quite laborious at times, however, with me and another colleague doing 95% of the actual job, and with various inconveniences occurring at various times. A particularly memorable one happened a few days before turning in the project when, while trying to make some modifications to the Buddypress integration into the theme, I modified a line in the Buddypress plugin's PHP file, and somehow managed to corrupt the plugin, which rendered the entire webpage inaccessible, including the WP admin dashboard. I later found out that this error is called a "white screen of death". I then emailed the course coordinator describing the situation and the troublesome plugin, and he proceeded to promptly disable it. After removing the line I originally wrote and re-enabling it, functionality was restored 100%."

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