MATLAB® and Design Recipes for Earth Sciences: How to Collect, Process and Present Geoscientific Information

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The overall aim of the class was to introduce undergraduate students to the typical course of a project. The project starts with searching of the relevant literature, reviewing and ranking of the published books and journal articles, extracting the relevant information as text, data or graphs from the literature, searching, processing and visualizing data, and compiling and presenting the results as posters, abstracts and oral presentations. In the first lecture, an unexpectedly-large number (ca. 65) of students subscribed to the course urging us to teach the course in a lecture hall with a projector, microphone and speaker system, a table for the teacher's laptop and equipment, private laptops of the students and wireless Internet. We used a MOODLE eLearning environment to handle the large number of participants in a highly interactive, tutorial-style course environment. Moreover, the students were organized in five GOOGLE groups not accessed by the course instructor, but led by elected student group leaders and their deputies. During the course, the instructor defined three principle topics for each of the groups within the overall theme Past Climate Changes. After having defined sub-themes within the groups for each student, the course culminated in the presentation of the project work as conference-style posters, 200-word abstracts and one-hour sessions with 10-15 two-minute presentations, chaired by the project leaders and their deputies. The course inspired a new textbook that will appear later this year, using a similar concept as its sister book MATLAB Recipes for Earth Sciences–3rd Edition (Trauth, Springer 2010).