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BLENDED – LEARNING IN TEACHING OF COMPUTER TECHNIQUES IN ARCHITECTURAL DESIGN – CAD

Key words: *blended – learning, Moodle platform, e-learning, CAD*

The question of blended-learning in teaching of Computer Techniques in Design subject, which is realized during the first year of stationary studies of 1st stage, is presented. The subject covers 60 hours of laboratory classes during two semesters and its aim is to allow students to learn how to prepare technical documentation, shape architectonic ideas in virtual space and present architectural concepts. Within its framework topics are realized in such software as: AutoCAD, ArchiCAD, 3DS MAX, Adobe Photoshop, Microsoft Power Point, Microsoft Word.

To intensify the results, and also due to specifics of the subject (work in the environment of a graphics editor) in addition to laboratory classes held on University premises an Internet course has been introduced. It was developed based on Moodle e-learning platform and published on the Cracow University of Technology e-learning website (ELF - e-learning framework). The course has been divided into introductory part, 10 learning modules and a summary. Introductory part covers aims of the program, its agenda, schedule of laboratory classes, detailed information on receiving the credit for the classes, list of Internet references and links to student versions of AutoCAD and ArchiCAD software. Available teacher-student and student-student communication channels are also given, as well as current news. Virtual office hours have been also implemented using a chat tool.

Fig. 1 Home page of the Computer Techniques in Design course.

The 10 modules present various groups of laboratory classes. Each of the modules has its short summary and is accompanied by an icon presenting its topic.
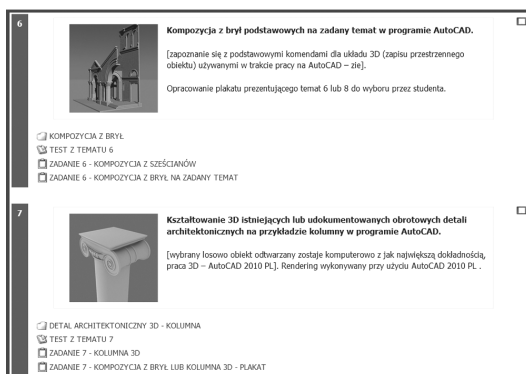

Fig. 2 Example laboratory modules in the Computer Techniques in Design course.

Each of the modules covers:

- a part dedicated to theoretical introduction, during which topics are randomly assigned to students and which provides teaching documentation and job-aids which contain examples of work of previous years students and laboratory classes tutorials.
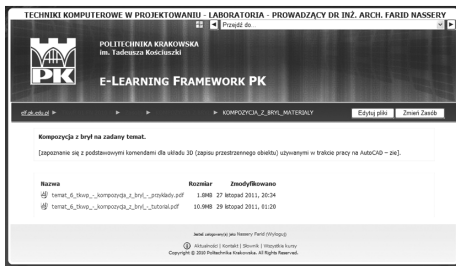
Fig. 3 Teaching documentation provided in modules – tutorials and example works.

- a part dedicated to verification of the gained knowledge through a type of a test-quiz, which uses random questioning mechanics implemented in the Moodle platform. The questions and the way they have been formulated directly refer to the CAD certification tests – e.g. AutoCAD certification tests.
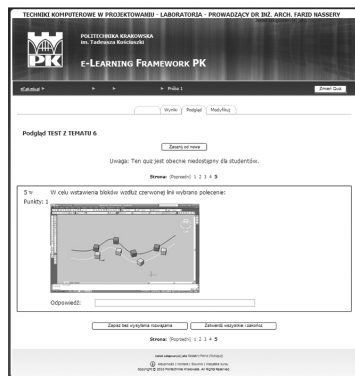

Fig. 4 Example questions from the test-quiz verifying skills and knowledge gained
during a given module.

- a part dedicated to handing in final works through submission of files for evaluation. During one semester two types of submissions have been foreseen: submission of files at the end of laboratory classes and submission for review.

- a competition, in a form of Moodle workshop, for the best composition of solids related to a given idea.

Final module is a summary containing: final test, in which possibility to randomly choose from each set of module questions is given, and handing in works representing all laboratory projects.

The course contains also parts created jointly with students such as dictionary of terms related to computer assisted design and a database of 2D and 3D objects produced by students.

Application of e-learning platform to assist teaching of Computer Techniques in Design subject allowed to strengthen the interaction between the teacher and the students. It also made resources related to this subject more accessible. The course is currently used by 99% of students, which may be an indication of its usefulness and functionality.

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