

A Modular E-Learning Environment to Teach GIS to On-Campus and Distance Education Students.

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Abstract:

Courses in Geographic Information Systems (GIS) using conventional instructional methods are now firmly established within the mainstream curricula of university programs world-wide for soils, agronomy, environmental science and other students. We established a novel, interactive virtual GIS computer lab for a graduate level course at the University of Florida which is offered to on-campus and distance education students. Our objectives were to build a virtual learning environment, which is a compartmentalized educational framework based on the Reusable Learning Objects (RLO) concept providing a digital educational resource that can be reused, scaled, updated and shared from a central repository in the support of instruction and learning. We used Hypertext Markup Language (HTML), Active Server Pages (ASP), Visual Basic (VB), Virtual Reality Modeling Language (VRML), MSAccess database, and ArcGIS and terminal software to build the virtual learning environment. The virtual GIS computer lab provides content (lecture material), quizzes, reading material, hyperlinks, animations and more for student-centered learning. Instructor-student interaction is implemented using multiple media such as message board, chatrooms and email. Students have 24 hour access from any remote local machine at home or on-campus to the virtual lab which hosts all course material and GIS software and datasets for simultaneous use by on-campus and off-campus students.

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