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Mathematical e-learning: state of the art and experiences at the Open University of Catalonia.

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Summary: We present a review of the state of the art in mathematical e-learning and some personal experiences on this area developed during the last eleven years at the Open University of Catalonia (UOC), a completely online university located in Spain. The article discusses important aspects related to online mathematics courses offered in higher education programs, including: benefits and challenges, universities offering this type of education, methodological considerations, emergent technologies, learning projects and environments, etc. Also, key aspects of the UOC mathematical e-learning model and its historical evolution are described and analysed. Special attention is paid to mathematical curricula in computer sciences degrees, where a lot of work needs to be done in order to adapt mathematics courses to the continuously changing educational necessities of students. A curricula design proposal, based on a top-down approach, is presented as a best practice. Finally, some trends and future perspectives on the subject are suggested.

Classification: D35 U55 R25

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