SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

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A NEW TEACHING METHOD: MASSIVE OPEN ONLINE COURSE (MOOC) APPLIED TO SPACE EDUCATION

Abstract

In June 2015, the course of Prof. Claude Nicollier "Space mission design and operations", given at EPFL (Swiss Federal Institute of Technology, Lausanne, Switzerland) since 2004, was selected to be adapted as a MOOC – Massive Open Online Course. A MOOC is an online course, free of charge and available to anyone with a fair internet connection who is willing to register on a specific platform using only an email address. It took almost one year of preparation from the selection to the online release of the course.

Each year around 100 students attended Claude Nicollier's course at EPFL. This adaptation into a MOOC is an opportunity to multiply significantly the number of students that have been following the course: more than 4000 students have registered 3 weeks before the release. The course becomes open to students all over the world with a huge majority from the USA (18%) and from India (13%).

A MOOC is constituted of videos, texts, exercises and forums that are adapted online to a wide audience. The professor speaking ex-cathedra is replaced by short videos that he records in a specific studio. Other video-clips coming from other sources such as simulations, documentary, interviews with international space experts have also been incorporated in the online version of the course.

This paper will present the different steps in the creation of such an online course, compared to a classical ex-cathedra course given at Master level. It will detail the features created especially for the online version, discuss the reception of students and the advantages and disadvantages of these features.

The other aspects that will be considered in this paper are the interaction with the students during the period when the course will be made available online from February 24 until April 27, 2016 as well as the outcomes of this first edition. For this purpose, several surveys will be conducted with the students and discussions with the teacher Claude Nicollier, the teaching assistants and the EPFL team supporting the video realization and the project will be analyzed.