

Development of an interdisciplinary space-engineering curriculum: a multidisciplinary class for promoting space educations and professions

Abstract

We propose to develop an interdisciplinary space-engineering curriculum that will allow students to combine their technical backgrounds learned in classes with practical applications in the fields of space engineering and science. This proposed curriculum will be a framework to interface the classroom closely with a real space system design and to motivate students for their advanced study and for their job career development in the space area. In particular, the curriculum is focused to teach students systems engineering of diversity of interdisciplinary efforts to develop a space science and engineering background through a Pico-satellite project which is based on the standard structure and interface with a launcher. The class will be opened to all engineering/science students who already built basic technical backgrounds in their own field. Therefore, this curriculum development will promote various aerospace professions as for their professional careers. This curriculum will also draw from the local resources in KSC and space industries at Cape Canaveral to help academia cultivate a space program unique in education. In addition, the proposed development will be extended to establish NSF's Research experience for Undergraduates (REU) and Research experience for Teachers (RET) programs in the space area.

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