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SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
On Track - Undergraduate Space Education (3)

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NANO-SATELLITE OUTREACH PROGRAM'S FIRST CUBESAT MISSION

Abstract

After the Success of Nayif-1, UAEs' and MBRSCs' first cubesat developed with students, the Nano-Satellite Outreach Program (NSOP) was established as a sustainable program that provides students with a learning platform. Its primary goal to involve students in all aspects of space systems development where they can apply knowledge gained from their previous and current engineering courses. The program is designed to be one and half to two years long depending on complexity of the cubesat. Its conducted by MBRSC team for a selective number on UAE students from different university and it is counted as the senior design project. To maximize the learning experience and to kick start the implementation during the students first senior design course, they were enrolled to the program from the start of their junior 2 semester i.e.: half a year before their senior design 1 starts.

After the students are enrolled they had to go through two training phases, the first focuses on arming them with the required knowledge, while the second concentrates on the on the job training. In the first phase and before getting involving in the cubesat development, the students were required to go through a self-learning phase. They were assigned readings and presentations which included space environment, space system engineering, orbital mechanics, launch systems and etc. In addition they had to go through some training courses such as system engineering and project development cycle. In phase two the students were allocated into smaller groups, each working under a mentor for a particular subsystem based on their backgrounds and capabilities. They had to work with their mentor on subsystem design and development, and present that work through mission milestones.

This paper will discuss in detail the first mission under the NSOP program, the detailed educational and training plan, the evaluated student learning experience, recommendations and challenges.