

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

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NANO-SATELLITE PROJECT-BASED LEARNING FOR CAPACITY BUILDING IN BASIC SPACE
TECHNOLOGY DEVELOPMENT

Abstract

In April 2013, Kyushu Institute of Technology (Kyutech) launched a new post-graduate curriculum, the Space Engineering International Course (SEIC). The curriculum is either two years (Masters) or three years (Doctor), and consists of research leading to a Master or Doctor degree, lectures on space engineering, project-based learning (PBL), and on-the-job training in space environment testing. SEIC is open to any student, Japanese or non-Japanese, who registers as a full-time graduate student at the Graduate School of Engineering. PNST (Post-graduate study on Nano-Satellite Technologies) fellows are supported through a United Nations/Japan long-term fellowship programme and comprise the core constituency of non-Japanese students. The PNST fellows are primarily from non-space faring nations and are expected to contribute to indigenous capacity building by bringing the basic space technology development knowledge and skills acquired through their studies at Kyutech back to their home countries or home institutions. The objective of PBL is to perform real-world problem solving to an open-ended question or challenge, for example, nano-satellite mission design that benefits society or developing countries. In this process students learn to apply their technical prowess to a real-world project, enhance systems engineering skills, learn to think as global engineers, and practice inter-cultural communication. Nano-satellite PBL in combination with the other aspects of SEIC is designed to allow students to implement applications-oriented space technology outside of Kyutech upon graduation. This paper details the first year of SEIC and nano-satellite PBL activities at Kyutech, and gives updates of the United Nations/Japan PNST long-term fellowship programme.