

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Interactive Presentations (IP)

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BUILDING TRANS-NATIONAL AND MULTI-DISCIPLINARY ACADEMIC CURRICULA THROUGH  
ADAPTATION OF A PROJECT-BASED APPROACH.

**Abstract**

Four pillars of learning identified in the UNESCO report in 1996 include four “L”s: learning to know, learning to do, learning to live together, and learning to be. Since then educators have been discussing how four pillars of learning can affect 21st century’s curriculum. Evidently, space-related education is based on traditional type curriculum. Therefore integration of new approaches in aerospace engineering and science curriculum is often challenging. This paper argues that transdisciplinary and project-based approach can be used in building innovative aerospace engineering and other space-related disciplines core curricula. The paper proposes using SDTP/MSIP projects as foundation for creating multi-disciplinary curricula in different universities and countries. The proposed methodology includes pilot team projects performed during two-week summer workshop, task diversification between participating universities, comprehensive individual studies (analysis), and joint findings reports (synthesis). Such approach is proposed to be tested during SDTP-2017 and in 2017-2018 academic year in Russia (MGTU) and USA (University of Houston).

The paper concludes with an analysis of potential opportunities and complications for the development and integration of presented academic strategy to increase adaptability of diverse hands-on experiences into already established educational programs in Russia and the US. In a summary, a platform for further inquiry into multi-disciplinary academic strategies is discussed for more in-depth investigation in the future.