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Future and current space missions: including and expanding all aspects of human life on-board and in other worlds (1)

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SPACE ARCHITECTURE EDUCATION AS A PART OF AEROSPACE ENGINEERING CURRICULUM

Abstract

Education is particularly important for new fields. In the case of Space Architecture, there are two core needs:

1. educating the aerospace community about the architect's process and role within the enterprise;
2. educating space architects and associated specialists about constraints, conditions, and priorities unique to human space systems.

These needs can be addressed, respectively, by two key educational tools for the 21st century:

1. introducing the Space Architecture discipline into space system engineering curricula;
2. developing Space Architecture as a distinct, complete training curriculum.

New generations of professionals with a Space Architecture background, by offering their inherently integrative design approach to all types of space structures and facilities, can help shift professional focus from just engineering-driven transportation systems and "sortie" missions to permanent offworld human presence. Although architectural and engineering approaches share some similarities in solving problems, they also have significant differences. Architectural training teaches young professionals to operate at all scales from the "overall picture" down to the smallest details; to provide directive intention – not just analysis – to design opportunities, to address the relationship between human behavior and the built environment, and to interact with many diverse fields and disciplines throughout the project lifecycle.