

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

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LIFE ON THE MOON: PROMOTING HUMAN-CENTERED DESIGN PERSPECTIVES IN SPACE  
EDUCATION

**Abstract**

In the Fall of 2020, the first ever “Life on the Moon” topic studio was offered within the Environmental Design department of Art Center College of Design. The course was attended by both undergraduate and graduate students at the university. Art Center’s Environmental Design department pursues a global approach to industry-driven design, fusing elements of industrial design, architecture, interior design and furniture design to focus on the total spatial experience from a human-centered perspective. The department’s emphasis on crafting spatial experiences produces leaders in the fields of industrial and interior component design, and graduates of the department create impact in domains such as branded retail, theme-driven dining, new hospitality, exhibition and residential design. “Life on the Moon” asked students to consider key habitability needs for future Lunar surface development by addressing the needs of multiple stakeholders during various missions and expeditions to the Lunar surface. The course promoted a human-centered perspective in considering key habitability needs for future space tourism, and in particular for living in gravity. Space traveler’s dining experience, clothing, exercise, rest, relaxation, entertainment, communication and working conditions were taken as opportunities for design innovation. The topic studio asked students to consider the sociological, political and commercial ramifications of a permanent human presence on the Lunar surface by designing a novel experience, habitat, or intervention for a new fleet of space explorers. The resulting student projects demonstrated novel and creative problem solving approaches to a range of auxiliary topics such as construction and materials usage in space, ecological sustainability, geopolitics, and human health and wellness. The fact that such topics typically remain beyond the scope of traditional systems engineering workflows suggests the value of human-centered design thinking to holistic problem-solving within the aerospace domain—and particularly when designing for human exploration. Outcomes of the course include an ongoing informational exchange with the Moon Village Association, with the intent of collaborating on future Lunar surface development projects. An anonymous informational survey distributed at the conclusion of the course validated that not only do the students now consider aerospace to be a new domain for employment opportunities, but several hope to pursue space-related design work in the future. The course is anticipated to be offered again in 2021 and a cross-program exchange is anticipated with individuals from NASA Ames Research Center and JPL.