

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

Author: Prof. Annalisa Dominoni
Politecnico di Milano, Italy, annalisa.dominoni@polimi.it

Prof. Benedetto Quaquaro
Politecnico di Milano, Italy, benedetto.quaquaro@polimi.it

Dr. Raffaella Pappalardo
ESA - European Space Agency, The Netherlands, raffaella.pappalardo@esa.int

Ms. Sue Fairburn
Wilson School of Design - Kwantlen Polytechnic University, Canada, Sue.Fairburn@kpu.ca

SPACE DESIGN LEARNING. AN INNOVATIVE APPROACH OF SPACE EDUCATION THROUGH
DESIGN

Abstract

Design is a method of actions, a problem-setting methodology that drives innovation and develops business success exploring and understanding the users and their needs for a more sustainable society. The reason why the contribution of Space Design becomes important today is due to the interest of Space agencies to attract the private sector in Space exploration, build multidisciplinary relationships and generate new business. In this context the design approach can be a powerful engine for the Space economy able to translate Space inspiration into new products involving both Space and non-Space industries.

In this paper is presented a new program in Space education and outreach focussed on the emerging area of Space Design - led by the authors at the Design School of Politecnico di Milano and supported by the European Space Agency (ESA) - with the aim to bring the young generations closer to the Space, educate professionals with a multidisciplinary attitude capable to deal with emerging technologies and future scenarios, create new cultural and business models crossing knowhow and research, explore and expand alternative design solutions, both in Space and on Earth. The idea of creating a Space Design discipline was born of conviction that Space innovation will have a strong influence on how people behave and perform. Considering that the principal task of a designer is to anticipate future scenarios, the opportunity to look at Space can really inspire students and help them to understand better how to become more conscious of the transformation technology brings. Moreover Space Design Courses are an unique opportunity to develop a powerful capacity of visioning moving into the most innovative areas of knowledge and technology that could help people to increase the quality of life.

The program includes different Space Design Courses developed during 2016, 2017 and 2018 that will be described as innovative didactics research case studies in which teaching and practice are strongly interconnected. The unusual and extraordinary environment offers the designers the chance to increase their creativity thinking out-of-the-box, like astronauts experience looking at the Earth from another point of view, and the ability to imagine and design new objects and tools starting from a perspective completely unknown. Describing the case studies, the emphasis will be placed on evaluating the learning outcomes of the Space Design program considering both expected goals and design methodologies applied to the design process.