

ARC-HEST

Architecture for Human Environment
with Smart Technologies

스마트 기술을 이용한 인간적 환경의 건축

Swiss-Korean Academic Exchange
Program for master students of
EPFL, HEIA-FR and UNIFR: Study
of the synergy of **architectural design**,
human factors, and **technologies**
in the office buildings and their combined
effect on the indoor environmental quality
and human-building interaction in the
context of the local culture and architecture

Natural Environment

Climate - Landscape - Weather

Building

Architecture - Construction - Design - Envelope - Materials - Surroundings

Technology

Automation - Energy - HVAC - Machine Learning - Operation - Sensing & IoT

IEQ

Acoustics - Air Quality - Lighting - Temperature

Humans

Behaviors - Comfort - Health
Perception - Performance



The strong traditions, use of advanced technologies and direction towards a sustainable society, that Switzerland and South Korea share, paves the way to the international cooperation **ARC-HEST** between two countries to raise awareness about urbanism and related social issues and facilitate solutions inspired by different cultures and policies. Through the collaborative work of Swiss and Korean academicians and students from different disciplines, the program aims to comprehensively study the working environment in each country in conjunction with the local culture and architecture.

The joint pedagogical program in the framework of two-week long Exchange Schools, a **Summer School 2019** in South Korea, and **Winter School 2020** in Switzerland, will consist of lectures, workshops, and studios. The essential part of each Exchange School is the visit of *3 case study buildings by students* and the analysis of the current state of the building design, operation, indoor comfort, occupant's satisfaction, and behaviour by different student groups. The main task of the student groups is to design a building assessment method, and to collect, process, and evaluate data from the existing buildings. Based on the findings, the groups will need to develop innovative solutions for the improvement of the built indoor environment, the satisfaction of the occupants with the building, and human-building interaction in the context of the diversity of occupants and architectural design across Switzerland and South Korea.

Behaviour of buildings and indoor environmental quality are generally different for heating (winter) and cooling (summer) seasons. For these reasons, the topic of **summer comfort** will be investigated in South Korea during the **Summer Exchange School** in **18-30 August 2019** and the topic of **winter comfort** will be studied in Switzerland during the **Winter Exchange School** in **2-14 February 2020**.

Each Exchange School will involve a total of selected **30 students** equally shared between 2 countries; the students *must be committed* to participating in both Exchange Schools and *have good communication and written English*. Each country coordinates the selection of students that have applied at the three individual universities. However, the trans-disciplinary approach has been identified as the *fundamental element* for the generation of innovative solutions applied to the built environment within the framework of this Exchange Program. Therefore, the common selection guidance is to aim for an interdisciplinary mix of excellent students.

ECTS Credits:

The program is equivalent to a semester project and offers 4 ECTS for Master students at EPFL (ENAC), 5 ECTS for Master students at UNIFR, 6 ECTS for Master students at HEIA-FR (JMA).

Financial Support:

Travelling and accommodation of selected students will be covered by the Program.

Application Procedure:

If you are interested to be part of the unique international program, submit your **CV & Motivational Letter** to the e-mail arc-hest@smartlivinglab.ch by **March 3^d, 2019**. Selected students will be informed by **March 18th, 2019**.

