

Architecture meets Robotics

Symposium, Design Marathon and Master Class

With Guest Lecturers:

Prof. Architect Dr. Konstantinos Alketas Oungrinis

School of Architecture University of Crete

Prof. Zvi Shiller Department of Mechanical Engineering and
Mechatronics, Ariel University

April 28th -30th 2015

The symposium on **Architecture meets Robotics** will include a design marathon, guest lectures and discussions between teachers and students.

The marathon will focus on continuous team work to integrate robotics in solving distinct and well-defined architectural design problems. Each team will consist of local and guest students and will be guided by instructors from the Ariel University School of Architecture as well as by the guest lecturers.

Participation

15 students from the Technical University of Crete, 20 students from the School of Architecture and 5 students from the Department of Mechatronics at Ariel University will form five teams.

Time-Table

- March 2nd: Selection of participating students.
- March 10th: Announcement of team structure.
- March 15th to April 25th: Preparatory work on projects (online readings, small pilot projects, team communication, theme assignment to teams, Skype meetings, concept designs, feasibility evaluations, materialization requirements)
- April 28th -30th: Workshop

Marathon Theme:

Interactive Hotels – Customizable Experiences

Design and operation of interactive architectural spaces in hotels, ranging from intelligent hotel rooms to adaptive facades. The Workshop will focus on the following five distinct hotel elements:

1. Rooms and Suites
2. Entrance and Lobby areas
3. Conference Halls and Ballrooms
4. Facades and the building Envelope
5. Exterior Spaces, Pool, Bars and Restaurants

The evaluation criteria:

All projects are expected to exhibit design qualities that address the well-being of the contemporary hotel visitor. Each team will develop a scaled working prototype of the proposed robotic system, as a proof of concept. Within this framework, the teams will also present visualizations, animations and diagrammatic representations of the proposed hotel space, highlighting performance issues as well as software and hardware solutions.

The Workshop will involve presentations and discussions on most of the following topics that affect the creation of automated, customizable, non-intrusive environments for hotel visitors-turn-to-inhabitants, directly or indirectly:

1. Experiential Design
2. Activity-based Design
3. Data-driven Design
4. Sustainability
5. Mediterranean Culture
6. Habitation/The notion of "Home"/Dwellings
7. Neo-nomads
8. Social Bias and Aesthetics
9. Human-Computer Interface
10. Cyber-Physical Objects/Environments
11. Internet-of-things
12. Human-Computer coexistence
13. Human-in-the-loop
14. Quantified Self – Quantified Space
15. Spatial Awareness/Communication with space
16. Spatial Augmented Reality

Schedule:

Tuesday, April 28th 2015 seminar class

10:00-11:30- Symposium and Master Class initial presentation with keynote presentation by – Prof. Beni Reuven Levy, Prof. Zvi Shiler, Prof. Konstantinos Alketas Oungrinis and Arch. Itzik Elhadif.

Beginning of the Design Marathon.

Independent team work in studio.

Wednesday, April 29th 2015 seminar class

10:00-13:00- Team presentations of concepts with integrated systems

Independent team work in studio.

Thursday April 30th 2015

10:00-11:00- **Guest Lecture: Prof. Zvi Shiler** "Architecture at the Robotics Age".

The lecture will introduce and promote the use of robotics technologies to create dynamic environments that enhance the user experience.

11:00- 13:30- Marathon contest submission and panel discussion with teachers and visitors.

14:00- 15:00- **Guest Lecture: Prof. Arch. Konstantinos-Alketas Oungrinis**

"Sensponsive Design: Integrating Ambient Intelligence and Robotics in Architecture"

15:00-16:00- Announcing prize winners of the competition and concluding remarks by the Head of the School, **Prof. Beni Reuven Levy**.