

SICENG

Sustainable Innovative Creative Engineering

“CREATIVITY ENGINEERING”

From a creative idea to its successful marketing

Course coordinator:	Dr. Hesamedin Ostad-Ahmad-Ghorabi
Level:	Bachelor, Master and PhD, professionals
Target group:	Students and professionals from all backgrounds interested in implementing creativity and innovation into their daily work
Date:	29.07 – 09.08.2013
Schedule	See course program

CONTACT

Organizer:

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LECTURERS

Dr. Hesamedin Ostad-Ahmad-Ghorabi

Hesam, or Dr.O. as he is called by his students struggling with his long name, holds a PhD in the field of ecodesign – sustainable product development. For more than ten years, he has been working in the Ecodesign Research group of the Vienna University of Technology (VUT) and helped many companies to implement ecodesign and develop green products, among them Palfinger Crane, Philips, Steelcase or Siemens. When Hesam realized the obstacles of implementing ecodesign in industry, he started to research in the field of creativity and focus more on the designer and the design process rather than ecodesign tools and methods. He developed the lecture creativity engineering back in 2006 and the Summer School on Creativity Engineering in 2011, for which he is head of.

Currently, Hesam is working at Magna Steyr Engineering Germany, where he develops car interiors. Along his career he was leading the development of acoustic parts and trunk interior for the Mercedes X218 Shooting Brake, which entered European market end of 2012. He is also involved in the development and project management of other car models entering the market in the next couple of years. While still affiliated with VUT, he contributes to research projects and keeps developing tools and methods for ecodesign in industry.

Hesam is author of five books and various papers (to access them, visit his personal website at www.ostad.at). He has been teaching ecodesign and creativity engineering in universities around the world, among them Michigan University of Technology in the U.S., the Universidad Politecnica de Valencia in Spain or UTM in Malaysia, evoking the nickname “ambassador of ecodesign”.

Dr. Charles Pezeshki

Chuck is Professor at Washington State University, School of Mechanical and Materials Engineering in USA. Since 1994 he is director of the Industrial Design Clinic where he is responsible for numerous SOTA upgrades to the learning experience, including structuring CAD across the ME Design curriculum. He is also founder of the Global Design Clinic. From 2007-2008 he was the Dassault Systemes Ecodesign Fellow and a guest professor at the Vienna University of Technology, Austria. His responsibilities included advising on Ecodesign and Ecodesign Education philosophies at DS, as well as organizing templates for curriculum across the European Community. Since 2012 he is co-lecturing the Summer School on Creativity Engineering with a focus on how engineers think, understand and act.

General course content

The course Creativity Engineering contains a mix of lectures, workshops, group work and excursions. The contents of the lectures will be examined through workshops. Participants will work in groups on an elaborated creative idea. They will need to follow the process of creating a new idea, developing and communicating the idea.

In the first week, participants will learn about the individual traits of creativity as well as about processes in teams and organizations that have an influence on creative performance. In the second week, participants have time to detail their ideas and turn them into business models. The work will be supervised by the lecturer(s). Also some lectures about presentation skills and cultural sensitivity in communication are given.

Participants will present their work in elevator pitch presentations to the lecturers in the middle of the week and as a full length presentation at the end of the week. After successful presentation, participants will receive a certificate of participation.

The project works of the participants will be documented in a paper (approximately 10 pages) with the intention to be published in a book, tentatively named *Exercising Creativity 2013*. Participants will be authors of their own contribution. Books will be produced after the course and will be provided as hardcopy to the participants and will also be available as eBook.

Week 1 – Creativity in individuals, teams and organizations

Objective

At the end of the first week, participants will have gained an understanding as to what a creative idea is and how creativity can be accessed. They will learn about individual obstacles in sourcing creativity and will be able to overcome these obstacles. Furthermore, participants should be capable of defining and detailing their creative ideas and of developing them coherently into business models and business plans.

Description

When it comes to developing creative ideas, an often cited approach is to “*think outside the box*”. While this advice may be clear at first, as it expresses the need for looking beyond

conventional mind settings, upon further investigation it is confronted with the question: *what or where is the “box”?*

There can be no unique definition of the “box” since the mindset of each individual is as unique as the individual itself. To envision the box, one must understand the nature of the individual and source where one’s ideas come from. Through the path to the source of creative ideas, many creativity blockers can be found. Knowing them and furthermore knowing how they can be overcome clears the way for creative ideas.

One can imagine that bringing together creative individuals in a team, the team output might not be as creative as the sum of the individuals’ creativity would propose so. Group effects and team dynamics may be a the reason for this effect. A similar situation is when a creative team is put into the environment of an organization. All the different working environments and boundaries have a direct influence on the creative performance. To ensure creativity is actually practiced in each of those environments, knowing about the creativity blockers and how to overcome them is essential.

Through the first week, the course will introduce the psychological background of creativity, in particular the role of intelligence and personality in creativity. Existing mindsets and their influence on the ideation process are also topics that will be addressed. Later in this week, team and organization processes will be introduced and the influence of these processes to creativity will be discussed. Participants will already start to form groups and think of the idea they further want to work on.

Week 2 – Group work with supervision – presentation of ideas

Objective

In the second week the concepts introduced in the previous weeks will be practiced in a real project.

Description

Week two will mainly gravitate around the course work. A workshop on presentation skills and cultural sensitivity in communication will be carried out to increase the participants’ ability to communicate their ideas. The general structure for the rest of the week will be coached work with real time feedback from the lecturers. Particular topics or areas of interest will be dealt with if the products or services so require.

The whole project work will be documented in a paper by the participants with the intention of having this document including as a chapter in a book.

REFERENCES AND FURTHER READING MATERIAL

Amabile, T., *The Social Psychology of Creativity*. Springer-Verlag, 1983.

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