"Advanced Human Science" Syllabus

Room: 532 (Building 5, 3rd Floor)   2013 Human Science Summer School sponsored by Human Science, Kyushu University

date	time	faculty members	topics	abstract
26/8 (Mon, P.M.)	III (13:00-14:30)	Kozaki	Sex Differences in Brain Function - Focus on Spatial Ability	1) Examples of studies for Sex differences in spatial performance. 2) Why are there sex differences in spatial ability? Anthropological Background. 3) How are there the sex differences? Genetic, Physiological, and Socio-cultural factors.
26/8 (Mon, P.M.)	IV (14:50-16:20)	Yasukouchi	What is PA Design?	PA Design is a design concept showing how we can apply human physiological characteristics to design.
26/8 (Mon, P.M.)	V (16:40-18:10)	Watanuki	Physiological Responses induced by Pleasant Stimuli	The topic in this lecture is as follows. 1. What is KANSEI (感性)？2. Physiological responses below the level of consciousness. 3. Physiological Index for the evaluation of Pleasantness. 4. A sense of Beautyand physiological responses.
27/8 (Tue, A.M.)	I (08:40-10:10)	Remijn	Multimodal integration in the Human Brain	The topic of the lecture will be human perception in general and multimodal integration of information coming from different senses (e.g., the eyes, the ears) in particular. We will look at some examples of how the brain accomplishes this and how we can qualitatively and quantitatively measure this.
27/8 (Tue, A.M.)	II (10:30-12:00)	Shiraishi	Auditory Evoked Potentials	Following introduction of basic anatomy of the auditory pathway, we learn classification of the auditory evoked potentials (AEPs), recording techniques of the AEPs and clinical applications such as infant auditory evaluations and diagnosis of central disorders.
27/8 (Tue, P.M.)	III (13:00-14:30)	Ueda	Speech Analysis and Synthesis: How can we Perceive Degraded Speech?	One of characteristic aspects of speech is that it is extremely robust against various distortions and loss of information. It has been reveled that we can perceive speech sounds with only a small number of channels, which transmit just power fluctuations of speech. We will explore how these channels can be connected with basic functions of auditory periphery.
28/8 (Wed, A.M.)	I (08:40-10:10)	Sunaga	Color Vision and Color Deficiency	* What is color? * Introduction of human color vision. * Color deficiency. * Color universal design.
28/8 (Wed, A.M.)	II (10:30-12:00)	Ito, Hiroyuki	Visual Illusions	Our visual world is not a copy of the physical world. Through a lot of visual illusions, we can learn how our brain works to construct the visual world that is virtually corresponding to the physical world. What these illusions imply is the main topic of this lecture.
28/8 (Wed, P.M.)	III (13:00-14:30)	Nakajima	Auditory Illusions	Some newly discovered auditory illusions will be demonstrated, and their implications to the study of auditory mechanisms will be explained. The roles of auditory perception in our everyday life will be also discussed. Mutual discussion based on perceptual experiences and step-by-step reasoning will be encouraged.
29/8 (Thu, A.M.)	I (08:40-10:10)	Ito, Hiroshi	An Introduction to Biological Rhythms	The topic of this lecture is oscillatory phenomena in nature. We will see examples of biological rhythms; circadian rhythms, firefly flashing, heart beating, neural firing, and so on. In particular, we will focus on synchronization of oscillators from a mathematical point of view.
29/8 (Thu, A.M.)	II (10:30-12:00)	Nouno	Computer Graphics	
29/8 (Thu, P.M.)	III (13:00-14:30)	Wijayanto	Human Adaptation to Hot Environment	The content of this lecture will be about long term human adaptation to hot environment that involves thermoregulatory responses (body temperature, sweating responses, etc) and behavioral responses (thermal comfort, thermal perception) to heat exposure. In particular, we will see how the differences in the heat adaptation level between the people from tropical countries and those from Japan.
30/8 (Fri, A.M.)	I (08:40-10:10)	Takagi	Interactive Evolutionary Computation	Following basic introduction of fuzzy systems, neural networks, and evolutionary computation (EC), we learn one of EC applications, interactive EC (IEC) which optimizes a target system based on human subjective evaluations. Through many IEC applications in wide variety of application areas, we learn its wide applicability and consider how to apply IEC to our research. Slides and a tutorial paper are downloadable from http://www.design.kyushu-u.ac.jp/~takagi/
30/8 (Fri, A.M.)	II (10:30-12:00)	Takagi	Practical Use of Statistical Tests	Correct use of statistical tests is essential to show the significant superiority of your methods to other methods. We learn which statistical test we should choose for which conditions, and how to use it. Slides are downloadable from http://www.design.kyushu-u.ac.jp/~takagi/TAKAGI/StatisticalTests.html
30/8 (Fri, P.M.)	III (10:30-12:00)	All Summer School participants	Presentation of field of study (1)	All participants are required to make a short presentation about their field of study and topic of research at their home university, if possible in relation to Human Science.
30/8 (Fri, P.M.)	IV (14:50-16:20)	All Summer School participants	Presentation of field of study (2)	All participants are required to make a short presentation about their field of study and topic of research at their home university, if possible in relation to Human Science.