

# "Advanced Human Science" Syllabus

Room 512 (near ground / Building 5 main entrance)

2015 Summer School

Date	Time	Instructor	Topic	Abstract
25/8 (Tue)	08:40 - 10:10	Kozaki	1. Lighting Environment	Light is well known to be a powerful synchronizer of our circadian rhythm. It also affects various kinds of psychophysiological aspects such as melatonin secretion, awareness, etc. This class introduces the psychophysiological effects of light and its characteristics.
25/8 (Tue)	10:30 - 12:00	Nouno	2. Computer Graphics	Making 3D initial using 3D-CAD and a 3D printer.
26/8 (Wed)	08:40 - 10:10	Remijn	3. An Introduction to Brain Research	In this lecture we will look at the structural and functional organization of the human brain, and discuss the working of the brain in relation to human perception through the senses.
26/8 (Wed)	10:30 - 12:00	Maeda	4. Environmental Ergonomics	1) Human environment system, 2) Human physiological regulation system to various environments, 3) Introduce some studies for environmental adaptability and lifestyle
27/8 (Thu)	08:40 - 10:10	Shiraishi	5. Auditory Evoked Potentials	Following an introduction of basic anatomy of the auditory pathway, we learn the classification of the auditory evoked potentials (AEPs), recording techniques of AEPs and clinical applications, such as infant auditory evaluations and diagnosis of central disorders.
27/8 (Thu)	10:30 - 12:00	Muraki	6. Ergonomics for all Ages and Abilities	1) The fact of the super aging society in Japan, 2) Social changes by population aging, 3) Importance of assisting devices and barrier-free environment in homes, 4) Design problems in the living environment and equipment for the elderly, 5) Examples of designs for the living environment and equipment for the elderly.
28/8 (Fri)	08:40 - 10:10	Ito (Hiroyuki)	7. 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 (Fri)	10:30 - 12:00	Nakajima	8. Auditory Illusions	Some newly discovered auditory illusions will be demonstrated, and their implications to the study of auditory mechanisms will be explained. The role of auditory perception in our daily life will also be discussed. Mutual discussion based on perceptual experiences and step-by-step reasoning will be encouraged.
31/8 (Mon)	08:40 - 10:10	Hiramatsu	9. Evolution of Color Vision	Why do we have color vision? Do humans have the best color vision in the animal kingdom? The characteristics of the human color vision system resulted from random genetic changes and adaptations of organisms to their environment, i.e. evolution. In this lecture, we will explore how our color vision has been shaped through evolution.
31/8 (Mon)	10:30 - 12:00	Seno	10. What is Vection?	In this lecture, visually induced self-motion perception (vection) will be fully explained. A lot of important studies of vection will be introduced.
1/9 (Tue)	08:40 - 10:10	Sakata	11. Multivariate Analysis through R	The essence of Multivariate Analysis (Regression Analysis, Principal Component Analysis and others) will be discussed.
1/9 (Tue)	10:30 - 12:00	Yamashita	12. Language Acquisition	This lecture covers an overview of the first and second language acquisition. We will look at the theoretical issues in how language skills are acquired and developed, and explore internal and external factors that affect success and rate of language acquisition.
1/9 (Tue)	13:00 - 14:30	Takagi	13. Interactive Evolutionary Computation	Following a basic introduction of fuzzy systems, neural networks, and evolutionary computation (EC), we learn of EC's applications, interactive EC (IEC), which optimizes a target system based on human subjective evaluations. Through many IEC applications in a wide variety of areas, we learn its wide applicability and consider how to apply IEC to our research. Slides and a tutorial paper can be downloaded at <a href="http://www.design.kyushu-u.ac.jp/~takagi/">http://www.design.kyushu-u.ac.jp/~takagi/</a>
3/9 (Thu)	10:30 - 12:00	participants	14-15. Presentations of field of study and lab work	All participants are required to make a short presentation about their field of study and topic of research at their home university, as well as a short overview of their lab work during the Summer School.
3/9 (Thu)	13:00 - 16:00	participants	14-15. Presentations of field of study and lab work	All participants are required to make a short presentation about their field of study and topic of research at their home university, as well as a short overview of their lab work during the Summer School.