Course Unit Descriptor

Study Programme: Psychology

Course Unit Title: Visual Perception

Course Unit Code: 21MP015

Name of Lecturer(s): Sunčica Zdravković, Ivana Jakovljev

Type and Level of Studies: MAS

Course Status (compulsory/elective): Elective

Semester (winter/summer): Winter

Language of instruction: Serbian, English

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated: 6

Prerequisites:

Course Aims:

Introducing students to

- current interdisciplinary research program of perception that starts with the description of stimuli, specified in optical and physical terms, and delas with the description of sensory systems and cortical areas, through psychophisical experiments and modeling

- applicaton of current vision research in marketing, visual arts, psychodiagnostics, machine design and psychoterapy

Developing skills for

- research in visual perception which combines knowladge from several scientific disciplines

- diognosing various patologis underlaying visual deficits

- revitalising visual functions in children and adults with impared visual functions

Learning Outcomes:

The course should

- ensure that students have good insight into current visual perception theories and research

- enable students to carry out their own basic or applied research in the domain of vison

Syllabus

Theory

1) Intro to visual perception; Physical stimuli in perception; Specificity of information mediated by light; Physical and geometrical optic; Spectral analysis. 2) Intro to visual research, major hypothesis; Visual pathways from retina to cortex (findings from Hubel and Wiesel to Zeki); Evolution of visual system. 3) Perception of colour and illumination; Lightness perception, constancy, illusions, adaptation (models from Helmholtz to Adelson). 4) Shape perception; Contour and contrast, pattern recognition, figure-ground distinction, grouping principles, machine simulations (from Gestalt psychology to Biederman); 5) Dept perception; Perception of 3D space; Depth cues; Neural network simulations (from Marr to Koenderink and Groesberg); 6) Motion perception; Kinetic depth effect, biological motion, aftereffects, causality

(models from Wertheimer to Nakayama).

Practice

Individual research projects starting with the lit search. Other activities include data acquisition and analysis as well as critical discussion of the obtained data. The outcomes would be presented in written and oral form.

Required Reading:

Snowden, R., Thompson, P., Troscienco, T.(2006). *Basic Vision*. Oxford University Press, UK.

Palmer S. E. (1999). *Vision Science: Photons to Phenomenology* Bradford Books, MIT Press Cambridge, MA.

Bruce, V., Green, P.R., Georgeson, M.A. (1997). *Visual perception*. Psychology Press Ltd. East Sussex, UK.

Marr, D. (1980). *Vision*. W.H. Freeman and Company. New York.

Gazzaniga M.(2002). *Cognitive Neuroscience: the biology of mind*. New York: Norton

Farah M. J. (2000). *The Cognitive Neuroscience of Vision*. Oxford Blackwell Publishers.

Zeki, S.(1993). *A vision of the Brain*. Blackwell Scientific Publication, Oxford, UK.

Eysenck M.W, Keane, M.T.(2005). *Cognitive Psychology*. Psychology Press Ltd. East Sussex, UK.

Weekly Contact Hours:	**Lectures:** 2 hours weekly	**Practical work:** 2 hours weekly

Teaching Methods:

Lectures, interactive teaching, student's presentations, student's projects defense

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation		written exam	
Practical work	20	oral exam	20
Preliminary exam(s)		…….	
Seminar(s)	60		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.