

3PS432 KOGNITIVNÍ PSYCHOLOGIE A TVOŘIVOST V INFORMATICE

Course code	3PS432
Course title in language of instruction	Kognitivní psychologie a tvořivost v informatice
Course title in Czech	Kognitivní psychologie a tvořivost v informatice
Course title in English	Cognitive Psychology and Creativity in the Computer Science
Mode of completion and number of credits	Credit (4 credits), Exam ECTS (6 credits) One ECTS credit corresponds to 26 hours of workload for an average student.
Type of course	Daily attendance: 2/2 (hours of lectures per week / hours of seminars per week)
Language of instruction	Czech
Level of course and year of study	master continuing: 2
Semester	Sklad FPH – FPH
Name of lecturer	PhDr. Emilie Franková, Ph.D. (supervisor)
Prerequisites	none

Aims of the course

The course is aimed at presenting evidence cognitive psychology and modern approaches to understanding and creativity in their application of science, as well as the development of relevant skills in the application.

Lectures presented findings from cognitive psychology and creativity, including appropriate examples. Emphasis is placed on understanding cognitive understanding of human psychosis, the presentation of different strategies, problem solving and decision-making and their effectiveness and creativity as an integrated approach to the activities of human psychosis at the reception, processing and use information.

In practice emphasis is placed on application skills in the field of science, ie on the development and improvement of cognitive processes and styles, and recognition of their specificities, in the development and recognition of creativity – and the possibility of non-specific and application of skills in the field of informatics.

Learning outcomes and competences

Upon successful completion of this course, students will be able to understand the personality as a cognitive system, use the knowledge cognitive psychology to update their cognitive potential, recognize creative personality, creative atmosphere and environment and creative product, to support the creative process, to build a creative environment and develop their creative skills.

Course contents

* An introduction to cognitive psychology: the definition of cognitive psychology, genesis of cognitive psychology, research methods and the study of cognitive processes in psychology of 20th century, the key issues of cognitive psychology.

* Attention and consciousness: the nature and status of attention and consciousness in terms of cognitive psychology, their importance for integrated activities of human psychics and personality, their relationship with communication, motivation and creativity.

* Perception: patterns of perception, models of perception in cognitive psychology, perception disorders and their consequences.

- * Memory: measuring memory, types and models of memory, alternative approaches, specific problems, improving and development processes of memory.
- * Memory processes including practice the use of specific functions of cerebral hemispheres and experience/emotional memory.
- * Mental representation and organization of knowledge (image and proposition etc.).
- * Mental model in cognitive psychology. The theory of mind.
- * The nature and acquirement of the language. Language and its contexts.
- * Problem-solving and creativity: the cycle of problem-solving, the types of problems and strategies to deal with them, barriers and aids in problem-solving, knowledge and problem-solving. Key issues of creativity and solving various types of problems.
- * Reasoning and decision-making: the assessment of alternatives and decision-making, deductive reasoning, inductive reasoning.
- * Creativity I: Creativity as a complex phenomenon, specific and non-specific creativity, creative attitudes, the basic characteristics of creative thinking, creativity in terms of quality and quantity of production.
- * Creativity II: The characteristics of the creative product and the characteristics and phases of the creative process; examples of creators and practical applications.
- * Creativity III: The characteristics of the creative individual, the possibility of recognizing and developing creativity, problems of creativity diagnostics.
- * Creativity IV: Creativity in the phylogenetic, anthropogenetic and ontogenetic development, examples of research studies and their results.
- * The paradoxes associated with creativity. Facilitators of the creativity, characteristics of procreative environment, the so-called secondary creativity.
- * Myths, barriers and inhibitors that block the creative potential and possibilities of their effective elimination: „openers“ of creative potential and their applications in the informatics.
- * Key models of creativity, their advantages and disadvantages and possibilities to their targeted applications in the field of informatics.
- * Methods of supporting and provoking creative thinking: knowledge of the training procedures and their application in the following areas: start-up, promoting and shaping the creative attitudes and habits, increasing sensitivity to the problems and the ability to estimate their degree of creative potential, training of the search for alternative methods of problem-solving and alternative evaluation of these solutions, training selecting suitable alternatives in accordance with the elected or required criteria, the evaluation of creative outputs and innovations inc. the field of informatics.
- * Characteristics of creative teams and organizations and relevant case studies.
- * Human intelligence and intelligence in computer science: the scales and structures of intelligence, information processing and intelligence, alternative views of intelligence, artificial intelligence, strategy for improving intelligence, new results of the examination of cognitive problems.
- * SUMMARY:
- * Nature and the status of cognitive psychology and creativity in the informatics: knowledge of cognitive system and patterns, and creativity as a competitive advantage.
- * Assessment of information and computing paradigm and an overview of use findings of cognitive psychology and creativity as well as utilization of relevant skills in practice.

Teaching methods and student workload

Type of teaching method	Hours of workload
	daily attendance
Participation in lectures	26
Preparation for lectures	13
Attendance at seminars/workshops/tutorials	26
Preparation for seminars/workshops/tutorials	39
Preparation of term paper	13
Preparation of presentation	13
Preparation for final oral exam	13
Creativization of a personality	13
Total	156

Assessment methods

Requirement type	Weight
	daily attendance
Active lecture/seminar/workshop/tutorial participation	52 %
Term paper	14 %
Presentation	4 %
Mid-term test(s)	8 %
Final oral exam	8 %
Creativization of a personality	14 %
Total	100 %
Special requirements and details: none	

Recommended reading

Type*	Author	Title	Published in	Publisher	Year	ISBN
R	THAGARD, P.	Úvod do kognitivní vědy : mysl a myšlení	Praha	Portál	2001	80-7178-445-1
R	STERNBERG, R. J.	Kognitivní psychologie	Praha	Portál	2002	80-7178-376-5
R	SEDLÁKOVÁ, M.	Vybrané kapitoly z kognitivní psychologie : mentální reprezentace a mentální modely	Praha	Grada	2004	80-247-0375-0
R	STERNBERG, R. J.	Úspěšná inteligence : jak rozvíjet praktickou a tvůrčí inteligenci	Praha	Grada	2001	80-247-0120-0
R	ŽÁK, P.	Kreativita a její rozvoj	Brno	Computer Press	2004	80-251-0457-5
A	URBAN, D.	Emocionální inteligence : šance pro nekonvenční myšlení a alternativní rozhodování	Praha	Management Press	1998	80-85943-79-4
A	DACEY, J. S. – LENNON, K. H.	Kreativita	Praha	Grada	2000	80-7169-903-9
A	BIRKENBIHL, V.	Piliny v hlavě? Návod k užívání mozku			2000	8086198049
A	DE BONO, E.	Atlas of management thinking	London	Penguin Books	1990	0-14-013776-9
A	DE BONO, E.	Pravdu mám já, určitě ne ty	Praha	Argo	1998	80-7203-066-3
A	HOWARD, P. J.	Příručka pro uživatele mozku : praktické informace a návody pro každodenní život	Praha	Portál	2002	80-7178-661-6
A	LUKÁŠOVÁ, R. – NOVÝ, I.	Organizační kultura : od sdílených hodnot a cílů k vyšší výkonnosti podniku	Praha	Grada	2004	80-247-0648-2
A	MALINA, J.	O tvořivosti ve vědě, politice a umění : Sv. I-III	Boskovice	Albert	1993	8090130577
A	MALINA, J.	Obdivuhodný člověk: Úvahy o lidské tvořivosti			1991	8070340428
A	POPPER, K. R.	Logika vědeckého zkoumání	Praha	Oikoymenh	1997	80-86005-45-3
A	SISKIND, B.	Čmeláci přece nemohou létat : sedm strategií správného rozhodování a řešení problémů	Praha	Management Press	2003	80-7261-091-0

* R – required reading, A – additional reading