

PSYCHOLOGY OF ATTENTION AND EXECUTIVE FUNCTIONS – Code 800145

Academic Year 2022-2023

COURSE INFORMATION

Undergraduate Studies: 0812 – Degree in Psychology (Studies Plan 2009-10)

Type: Compulsory

ECTS: 6.0

Module: Compulsory psychological training

Area: Psychological processes

Year: First

Semester: 2

INSTRUCTOR INFORMATION

Name: Berenice Valdés Conroy, PhD

Mail: bvaldes@ucm.es

Office number: 1314.B

Office hours: Tuesday Monday 12-14h and Tuesday 11-13h.

SYNOPSIS

Understanding main concepts, theories, and phenomena of attention. Familiarize with procedures and techniques used in psychology of attention research. Learning to interpret and report research results within attention framework. Understanding the role of attention in behaviour explanations.

COMPETENCIES

General competencies

GC1: Know and understand the functions, characteristics and limitations of the different theoretical models in psychology.

GC2: Know and understand the basic laws of the different psychological processes.

GC4: Know and understand the biological foundations of human behaviour and psychological functions.

GC5: Know and understand the main psychosocial principles of the functioning of groups and organizations.

GC6: Know and understand research methods and data analysis techniques.

GC15: Know and comply with the requirements of professional ethics in psychology. Know and understand the main psychosocial principles of the functioning of groups and organizations.

Transversal competencies

TC1: Analysis and synthesis.

TC2: Preparation and defence of properly reasoned arguments.

TC3: Problem solving and decision making in Psychology.

TC5: Looking for information and data interpretation on social, scientific and ethical topics related to the field of Psychology.

TC6: Team work and collaboration with other professionals

TC7: Critical thinking and self- analysis.

TC9: Communication skills, learning how to communicate ideas to both, professional and non-professional audiences.

Specific competencies

SC1: Identify needs and demands of the recipients of work performed by the psychologist in the different areas of application.

SC2: Be able to establish goals of basic psychological action in different contexts, proposing and negotiating goals with recipients and interested parties.

SC4: Be able to describe and measure variables (personality, intelligence and other aptitudes, attitudes, etc.) and cognitive, emotional, psychobiological and behavioural processes.

SC5: Be able to identify differences, problems and needs.

SC8: Be able to identify group and inter-group problems and needs.

SC14: Be able to use strategies and techniques to participate in interventions with recipients.

TEACHING ACTIVITIES

Formal lectures (2h per week): The lecturer will deliver theoretical content.

Presentations in class: Students will present a short class in teams of about 20 min. This presentation should be about the content of a research article about attention and they will also present an original idea for an experiment to complete their final assignment (see below).

Final assignment: Students will complete an original experiment about attention and they will present the results in the format of a Poster to be shown in a public session at the end of the course.

Tutorials: Students will attend in groups to tutorial sessions in the lecturer's office to receive orientation about their final assignments and any other questions

Practical sessions in the computer Lab: Students will attend to practical sessions in a computer lab in which they will complete experimental task, collect and analyse data demonstrating main attentional phenomena explained in the classroom (Stroop, Flanker, Visual Search...etc).

Practical reports will be submitted via the virtual campus.

ECTS BREAK-DOWN

Face-to face: 4.5

Not-face to –face: 1.5

Important note: Both the distribution of theoretical and practical teachings and the percentage of attendance may be altered by the changes that may occur due to the health crisis of COVID-19 and always in accordance with what has been decided by the academic authorities. Possible changes will be duly communicated to the students.

ASSESSMENT METHODS:

To pass the course students will have to succeed a final exam (>4.5) and to complete and submit at least the 80% of a number of laboratory activities. Some of the lab classes will involve the use of software (E-prime, Excel, Word).

80% of attendance to lab activities is required to pass the course.

Final note:

Final Exam (70%) + Lab activities and final assignment (30%)

Following Art. 5 del Real Decreto 1125/2003, final note will be as follows:

0-4,9: Suspenso (SS).

5,0-6,9: Aprobado (AP).

7,0-8,9: Notable (NT).

9,0-10: Sobresaliente (SB).

A second examination in June will be allowed for those students who failed to pass the exam in May.

Important note: The evaluation methods could be altered by the changes that may occur due to the health crisis of COVID-19 and always in accordance with what is decided by the academic authorities. Possible changes will be duly communicated to the students.

BRIEF PROGRAMME OUTLINE

1. Definition and types of Attention
2. Introduction to theoretical accounts and models of attention.
3. Automatic and controlled processing
4. Selective Attention
5. Divided Attention
6. Sustained Attention
7. Executive functions, Attention and control.
8. Neurocognitive perspective: Networks of attention.
Additional Topics may be discussed in seminars and hands-on activities

MAIN READING MATERIALS:

Diamond, A. (2013). Executive functions. *Annual review of psychology*, 64, 135-168.
Posner, M.I., & Raichle, M.E. (1994). *Images of mind*. Scientific American Library. New York.
Styles, E. (2006). *The psychology of attention*. 2nd Edition Psychology Press.

LAB MATERIALS:

Stoet, G. (2017). PsyToolkit: A novel web-based method for running online questionnaires and reaction-time experiments. *Teaching of Psychology*, 44(1), 24-31. <https://www.psychtoolkit.org/>

Wolfe, J. M., Kluender, K. R., Levi, D. M., Bartoshuk, L. M., Herz, R. S., Klatzky, R. L., & Merfeld, D.M. (2006). *Sensation & Perception*. Sunderland, MA: Sinauer (Chapter 7).
https://learninglink.oup.com/access/sensation-and-perception-5e-student-resources#tag_chapter-07

ADDITIONAL READING MATERIALS:

- American Psychological Association. (2007). *APA style guide to electronic references* (PDF). Washington, DC: Author. Retrieved September 14, 2008, from <http://books.apa.org/books.cfm?id=4210509>
- Aron, A. R., Robbins, T. W., & Poldrack, R. A. (2004). Inhibition and the right inferior frontal cortex. *Trends in cognitive sciences*, 8(4), 170-177.
- Cash, F.T. (2009). Caveats in the proficient preparation of an APA-style research manuscript for publication. *Body Image*, 6, 1-6 Retrieved from: <http://www.psych.yorku.ca/sp/Cash%202008%20Preparing%20an%20APA-Style%20Manuscript.pdf>
- Faraone, S., Asherson, P., Banaschewski, T., Biederman, J., Buitelaar, J., Ramos-Quiroga, J. A., ... & Franke, B. (2015). Attention-deficit/hyperactivity disorder. *Nature reviews. Disease primers*, 1, 15020.
- Fuster, J. M. (2000). Executive frontal functions. *Experimental brain research*, 133(1), 66-70.
- Godefroy, O. (2003). Frontal syndrome and disorders of executive functions. *Journal of neurology*, 250(1), 1-6.
- Hurford, I. M., Kalkstein, S., & Hurford, M. O. (2011). Cognitive rehabilitation in schizophrenia: Strategies to improve cognition. *Psychiatric Times*, 28(3), 43-43.
- Knight, R. T., Staines, W. R., Swick, D., & Chao, L. L. (1999). Prefrontal cortex regulates inhibition and excitation in distributed neural networks. *Acta psychologica*, 101(2-3), 159-178.
- Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... & Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the national Academy of Sciences*, 108(7), 2693-2698.
- Posner, M. I., Rothbart, M. K., & Ghassemzadeh, H. (2019). Focus: Attention Science: Restoring Attention Networks. *The Yale journal of biology and medicine*, 92(1), 139.
- Sarter, M., Givens, B., & Bruno, J. P. (2001). The cognitive neuroscience of sustained attention: where top-down meets bottom-up. *Brain research reviews*, 35(2), 146-160.
- Stuss, D. T. (2011). Functions of the frontal lobes: relation to executive functions. *Journal of the International Neuropsychological Society: JINS*, 17(5), 759.