STRESS: NEURO-ENDOCRINE-IMMUNE INTERACTIONS

1. GENERAL

SCHOOL	SOCIAL SCIENCES		
DEPARTMENT	PSYCHOLOGY		
LEVEL	Undergraduate		
COURSE CODE	Ψ-3408	**SEMESTER**	6th
COURSE TITLE	**STRESS: NEURO-ENDOCRINE-IMMUNE INTERACTIONS**		
COURSE INSTRUCTOR	**Andreas Kastellakis,** Associate Professor of Physiological Psychology		
TEACHING ACTIVITIES		**WEEKLY HOURS**	**ECTS**
Lectures and training in new skills (presentations of original research papers by students and writing of review papers)		**3**	**6**
COURSE TYPE	Skills Development (Seminar)		
PREREQUISITES COURSES:	Research Methods I (Ψ-1201)		
INSTRUCTION/EXAM LANGUAGE:	Greek		
OFFERED TO ERASMUS STUDENTS	No		
COURSE WEB PAGE (URL)	https://elearn.uoc.gr/course/view.php?id=339 (password required)		

2. LEARNING OUTCOMES

Learning Outcomes
The aim of this course is to provide the students the opportunity to explore the most recent scientific literature in the topic of physiological psychology of stress. Upon successful completion of the course, the students are expected to have been familiarized with the basic concepts on biopsychology of stress (e.g. stress mechanisms, stress-related neurobehavioral phenotypes, as well as stress-evoked neuropsychiatric disorders, basic experimental paradigms etc). Also the students are expected to have been familiarized with: • Studying original research papers • Summarizing papers • Presenting papers • Seeking references using online databases • Preparing a synthetic-literature work
General Competences
• Search for, analysis and synthesis of data and information, with the use of the necessary technology • Working independently • Team work

- Project planning and management
- Working in an interdisciplinary environment
- Production of free, creative and inductive thinking

3. COURSE CONTENT

- The relationship between stress and neural system.
- The relationship between stress and endocrine system.
- The relationship between stress and immune system.
- Interactions between these systems during stress conditions

4. INSTRUCTIONAL AND LEARNING METHODS - EVALUATION

INSTRUCTION METHOD	In class (face-to-face; In the first meetings, the instructor will present some topics on stress biopsychology, how to seek relevant literature and use APA format to document sources). Then each student will present a recent original research work published in peer reviewed scientific journals. After giving presentations the students will discuss and criticize aspects of work. The students who choose to attend this seminar are required to be present in all lectures and presentations (maximum allowed absences: 2). The choice of the topic of the presentations will be made in collaboration with the instructor. The students who choose to attend the seminar are also required to compose a critical review paper that should be submitted by the end of the exams period in September the latest.
INFORMATION AND COMMUNICATION TECHNOLOGIES USED	Use of ICT in teaching Support for learning (communication with students and delivery of all course material) via the web-site of course on UoC e-learn online platform.
TEACHING ORGANIZATION	

Activity	***Semester Work load***	***ECTS credits***
Lectures	12 (4 X 3)	0,48
Oral presentation of the articles	27 (9 X 3)	1,08
Skill training: Preparation for the oral presentation(in-class)	20	0,8
Group assignments and exercises: Writing of abstracts	30	1,2

	Independent study & writing an article review	65	2,6
	Course Total	***154***	***6,16***
STUDENT EVALUATION	The evaluation is in Greek for the students of UoC and in English for the Erasmus students. The evaluation will be by means of: I. Oral presentation of a original research article; 25% of the final grade II. Class participation; 10% of the final grade III. Homework reports (abstracts of original research articles) delivered every week; 25% of the final grade IV. Writing a literature review on a specific topic emphasized on relevant research findings; 7000-8000 words; 40% of the final grade The evaluation criteria are presented during the 1st lecture of the semester. Moreover, all criteria are available to the students via the web-site of course on UoC e-learn platform.		

5. BIBLIOGRAPHY

Basic bibliography:

- Widmaier P.E., Raff, H., & Strang, T.K. (2016). *Vander's Human Physiology: The mechanism of body function* (Editor in Greek: N. Geladas). Nicosia: Broken Hill Publishers Ltd (Greek edition).

Additional Reading:

- scientific journals and books (from the central library)
- Ader, R. (1995). Historical Perspectives on Psychoneuroimmunology. In H. Friedman, T.W. Klein & A.L. Friedman (Eds.), *Psychoneuroimmunology, stress and infection* (pp. 1-21). Florida: CRC Press, Boca Raton.
- Arnetz, B.B., & Ekman, R. (2006). Stress in Health and Disease. Wiley-VCH Verlag GmbH & Co.
- Chroussos, G.P. (2009). Stress and disorders of the stress system. *Nature Reviews Endocrinology*, *5*, 374-381.
- Conrad C.D. (2011). *The Handbook of Stress: The Neuropsychological Effects on the Brain.* Oxford: Wiley-Blackwell.
- De Kloet, E.R. (2004). Hormones and the stressed brain. *Annals of the New York Academy of Sciences, 1018*, 1–15.
- Karsten, C.A., & Baram, T.Z. (2013). How does a neuron "know" to modulate its epigenetic machinery in response to early-life environment/ experience? *Frontiers in Psychiatry*, *4*, 89, doi: 10.3389/fpsyt.2013.00089

- Kiecolt-Glaser, J.K., & Glaser, R. (1994). Psychoneuroimmunology and Health Consequences: Data and Shared Mechanisms. *Psychosomatic Medicine, 57*, 269-274.
- Lorentz, M.M. (2006) Stress and Psychoneuroimmunology Revisited: Using mind-body interventions to reduce stress. *Alternative Journal of Nursing, Issue 11*
- Lupien, S.J., Maheu, F., Tu, M., Fiocco, A., & Schramek, T.E. (2007). The effects of stress and stress hormones on human cognition: Implications for the field of brain and cognition. *Brain and Cognition, 65*, 209–237.
- Schwabe, L., Joëls, M., Roozendaal, B., Wolf, O.T., & Oitzl, M.S. (2012). Stress effects on memory: An update and integration. *Neuroscience and Biobehavioral Reviews,* 36(7), 1740-1749.
- Steckler, T., Kalin, N.H., & Reul, J.M.H.M (2005). *Handbook of Stress and Brain* (vol. I & II). Amsterdam: Elsevier.
- van Praag, H.M., de Kloet, E.R., & van Os, J. (2004). Stress, the Brain and Depression. Cambridge UK: Cambridge University Press