Detailed Course Syllabus

Academic Year	2025 / 2026		**Semester**	Winter	
Study Program	Undergraduate University Study in Psychology	**Specialization / Major in**	Psychology	**Year of Study**	2., 3.

I. BASIC COURSE INFORMATION

Name	EPIGENETICS IN PSYCHOLOGY		
Abbreviation		**Code**	
Status	Elective	**ECTS**	3
Prerequisites			
Total Course Workload			
Teaching Mode	**Total Hours**	**Teaching Mode**	**Total Hours**
Lectures	15	Seminars	15
Class Time and Place			

II. TEACHING STAFF

Course Holder					
Name and Surname	Jasminka Štefulj				
Academic Degree	PhD		**Professional Title**	Full Professor	
Contact	**E-mail**	jasminka.stefulj@unicath.hr	**Telephone**	+385 (1) 3706 635	
Office Hours					
Associate					
Name and Surname	Maja Žutić				
Academic Degree	PhD		**Professional Title**		
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Office Hours					

III. DETAILED COURSE INFORMATION

Teaching Language	English
Course Description	**Course Objectives**: The course introduces students to the biological mechanisms by which experience influences behavior and to current scientific research in the field of behavioral epigenetics. **Course Content**: Psychology and biology – introductory lecture; Introduction to genetics - genotype, phenotype, environment; Foundations of modern genetics; Gene expression and regulation; The emergence of epigenetics; DNA methylation and other epigenetic mechanisms; Research methods in human behavioral

	epigenetics. Epigenetic reprograming; Epigenetics and prenatal environment; Experience and epigenetics; Epigenetic mechanisms in health and disease; Epigenetic inheritance.
Expected Educational Outcomes	To describe the role of epigenetics in the development of behavior; to discuss the contribution of epigenetic mechanisms to behavior and mental health; to critically evaluate current research in the field of behavioral epigenetics.
Textbooks and Materials	
Required	1) Moore, D. S. (2015). The Developing Genome: An Introduction to Behavioral Epigenetics (1st ed.). Oxford University Press 2) Štefulj, J., lecture slides
Supplementary	Review and original research articles, e.g. o Smeeth, D., Beck, S., Karam, E. G., & Pluess, M. (2021). The role of epigenetics in psychological resilience. *The Lancet Psychiatry*, 8(7), 620–629. https://doi.org/10.1016/S2215-0366(20)30515-0 o Aristizabal, M. J., Anreiter, I., Halldorsdottir, T., Odgers, C. L., McDade, T. W., Goldenberg, A., Mostafavi, S., Kobor, M. S., Binder, E. B., Sokolowski, M. B., & O'Donnell, K. J. (2020). Biological embedding of experience: A primer on epigenetics. *Proceedings of the National Academy of Sciences of the United States of America*, 117(38), 23261–23269. https://doi.org/10.1073/pnas.1820838116 o Gottschalk, M. G., Domschke, K., & Schiele, M. A. (2020). Epigenetics Underlying Susceptibility and Resilience Relating to Daily Life Stress, Work Stress, and Socioeconomic Status. *Frontiers in Psychiatry*, 11, 163. https://doi.org/10.3389/fpsyt.2020.00163 o Kraaijenvanger, E. J., He, Y., Spencer, H., Smith, A. K., Bos, P. A., & Boks, M. P. M. (2019). Epigenetic variability in the human oxytocin receptor (OXTR) gene: A possible pathway from early life experiences to psychopathologies. *Neuroscience and Biobehavioral Reviews*, 96, 127–142. https://doi.org/10.1016/j.neubiorev.2018.11.016 o Liberman, N., Wang, S. Y., & Greer, E. L. (2019). Transgenerational epigenetic inheritance: from phenomena to molecular mechanisms. *Current Opinion in Neurobiology*, 59, 189–206. https://doi.org/10.1016/j.conb.2019.09.012 o Bale T. L. (2015). Epigenetic and transgenerational reprogramming of brain development. *Nature Reviews Neuroscience*, 16(6), 332–344. https://doi.org/10.1038/nrn3818 o Babenko, O., Kovalchuk, I., & Metz, G. A. (2015). Stress-induced perinatal and transgenerational epigenetic programming of brain development and mental health. *Neuroscience and Biobehavioral Reviews*, 48, 70–91. https://doi.org/10.1016/j.neubiorev.2014.11.013
Examination and Grading	

To Be Passed	Yes	**Exclusively Continuous Assessment**	No	**Included in Average Grade**	Yes
Prerequisites to Obtain Signature and Take Final Exam	Regular attendance of classes (at least 70% attendance); Achievement of at least 35 points from teaching activities (two mid-term exams and seminar); Fulfillment of seminar obligations.				
Examination Manner	Achieving points: 1. Teaching activities - 70% of the grade: 1st colloquium - 25% 2nd colloquium - 25% seminar presentation - 20%				

	2. Final oral exam - 30% of the grade
Grading Manner	excellent (5) - 90 to 100% points very good (4) - 80 to 89.9% points good (3) - 65 to 79.9% points pass (2) - 50 to 64.9% points insufficient (1) - 0 to 49.9 % points
Detailed Overview of Grading within ECTS	3 ECTS
Midterm Exam Dates	Will be announced
Final Exam Dates	Will be announced

IV. WEEKLY CLASS SCHEDULE

Lectures

Week	Topic
1.	Psychology and biology – introductory lecture
2.	Introduction to genetics - genotype, phenotype, environment
3.	Foundations of modern genetics
4.	Gene expression and regulation
5.	The emergence of epigenetics
6.	Mid-term exam 1
7.	DNA methylation and other epigenetic mechanisms
8.	Research methods in human behavioral epigenetics
9.	Epigenetic reprogramming
10.	Epigenetics and prenatal environment
11.	Experience and epigenetics
12.	Epigenetic mechanisms in health and disease
13.	Transgenerational epigenetic inheritance
14.	Mid-term exam 2
15.	Epigenetics in psychology – implications and concluding remarks

Seminars

Week	Topic
1.	Introduction to seminars
2.	Seminars related to the lecture topic
3.	Seminars related to the lecture topic
4.	Seminars related to the lecture topic
5.	Seminars related to the lecture topic
6.	Mid-term exam 1
7.	Seminars related to the lecture topic

8.	Seminars related to the lecture topic
9.	Seminars related to the lecture topic
10.	Seminars related to the lecture topic
11.	Seminars related to the lecture topic
12.	Seminars related to the lecture topic
13.	Seminars related to the lecture topic
14.	Mid-term exam 2
15.	Final discussion