Detailed Course Syllabus

Academic year: 2026/2027	**Semester:** Winter semester
Year of study: 2	**Study programme:** Psihologija (R) (elective) (Prijediplomski)

I. BASIC COURSE INFORMATION

Name: Epigenetics in Psychology	
Abbreviation: IZBP252	
ECTS: 3	**Code:** 287932
Prerequisites: No	
Total Course Workload	
Teaching Mode	**Total Hours**
Lecture	15
Seminar	15
Class Time and Place: HKS - according to the published schedule	

II. TEACHING STAFF

Course Holder	
Name and Surname: Štefulj Jasminka	
Academic Degree:	**Professional Title:** redoviti profesor
Contact E-mail: jasminka.stefulj@unicath.hr	**Telephone:**
Office Hours: According to the published schedule	
Course Assistant	
Name and Surname: Žutić Maja	
Academic Degree:	**Professional Title:** viši asistent - predavač
Contact E-mail: maja.zutic@unicath.hr	**Telephone:**
Office Hours: According to the published schedule	

III. DETAILED COURSE INFORMATION

Teaching Language: English

Course Description	*This course introduces the processes through which environmental influences become biologically embedded and shape behavior. It provides an overview of key concepts in genetics and epigenetics and examines how environmental factors and life experiences influence development, mental health, and psychopathology through epigenetic mechanisms. The course also introduces key research methods in behavioral epigenetics and develops students' ability to critically evaluate current research in this field.*
Educational Outcomes	Students will be able to: explain and discuss the implications of epigenetics for psychology; describe key epigenetic mechanisms and explain how they contribute to behavior and mental health disorders; describe research designs and methods used in behavioral epigenetics and comment on their advantages and limitations; present a selected topic in behavioral epigenetics and critically evaluate current research in the field.
Textbooks and Materials	
Required	Moore, D. S. (2015). The Developing Genome: An Introduction to Behavioral Epigenetics (1st ed.). Oxford University Press
Supplementary	◦ Montel Hayes, R., Mason, C. E., & Miller, J. J. (2025). The clinical use of epigenetics in psychiatry: a narrative review of epigenetic mechanisms, key candidate genes, and precision psychiatry. *Frontiers in Psychiatry*, 16, 1671122. https://doi.org/10.3389/fpsyt.2025.1671122 ◦ 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 ◦ 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 ◦ 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 ◦ 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 ◦ 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 ◦ Moore D. S. (2017). Behavioral epigenetics. Wiley interdisciplinary reviews. Systems Biology and Medicine, 9(1), 10.1002/wsbm.1333. https://doi.org/10.1002/wsbm.1333 ◦ Lester, B. M., Conradt, E., & Marsit, C. (2016). Introduction to the Special Section on Epigenetics. *Child Development*, 87(1), 29–37. https://doi.org/10.1111/cdev.12489 ◦ Bale T. L. (2015). Epigenetic and transgenerational reprogramming of brain development. *Nature Reviews Neuroscience*, 16(6), 332–344. https://doi.org/10.1038/nrn3818 ◦ 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 DA	**Exclusively Continuous Assessment** NE	**Included in Average Grade** DA

Prerequisites to Obtain Signature and Take Final Exam	Regular attendance of classes (at least 70% attendance); Fulfillment of seminar obligations; At least 35 points from teaching activities (two colloquiums and seminar).

Examination 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
Grading Manner	Achieving points: 1st colloquium 25 points, 2nd colloquium 25 points, seminar 20 points, and final oral exam 30 points.

Detailed Overview of Grading within ECTS

ACTIVITY TYPE	ECTS Student Workload Coefficient	GRADE PERCENTAGE (%)
Class Attendance	0.80	0
Seminar Presentation	0.44	20
Midterm Exam	0.55	25
Midterm Exam	0.55	25
Total in Class	2.34	**70**
Final Exam	0.66	30
TOTAL ECTS (Classes + Final Exam)	3.00	**100**

IV. WEEKLY CLASS SCHEDULE

[Predavanja]

#	Topic
1	Biology and behavior: 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	1st colloquium
7	DNA methylation and other epigenetic mechanisms
8	Epigenetic reprogramming
9	Epigenetics and the prenatal environment
10	Experience-dependent epigenetic changes
11	Epigenetic mechanisms in psychopathology
12	Transgenerational epigenetic inheritance
13	Research methods in behavioral epigenetics
14	2nd colloquium
15	Epigenetics in psychology: implications and concluding remarks
[Seminari]	
#	**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	1st colloquium
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	2nd colloquium
15	Final discussion