

COURSE OUTLINE

1. GENERAL

SCHOOL	SOCIAL SCIENCES		
DEPARTMENT	PSYCHOLOGY		
LEVEL	Undergraduate		
COURSE CODE	PSY-3104	5th SEMESTER	5
COURSE TITLE	(Lab) Experimental Research and Individual Differences		
TEACHING ACTIVITIES	WEEKLY HOURS	ECTS	
Laboratory exercises, research design workshops, project supervision, feedback	3	6	
COURSE TYPE	Skills Development (Laboratory)		
PREREQUISITES COURSES:	Research Methodology I; Statistics I		
INSTRUCTION/EXAM LANGUAGE:	Greek		
OFFERED TO ERASMUS STUDENTS	No		
COURSE WEB PAGE (URL)	https://elearn.uoc.gr/course/view.php?id=4596#section-0		

1. LEARNING OUTCOMES

Learning Outcomes
<p>In this laboratory, students will have the opportunity to design, under supervision, an original research study that combines experimental methodology (independent groups designs, repeated measures designs, complex experiments) with correlational approaches using data that require multivariate statistical analysis.</p> <p>The laboratory also provides the framework for students to conduct a pilot study and present preliminary data.</p> <p>The course is grounded in the experimental approach to studying behavior and understanding cognitive processes, while also examining the influence of individual differences, such as personality traits and individual abilities.</p> <p>Contemporary research shows that the simultaneous study of individual differences explains a significant portion of variance in experimental effects resulting from the manipulation of independent variables. This mixed approach increases ecological validity and leads to a more complete understanding of psychological phenomena.</p>

The course focuses primarily on Research Methodology in Psychology, Individual Differences as well as Cognitive Psychology and Personality Theories.

By the end of the course, students are expected to:

- Design an original experimental study that investigates cognitive processes alongside individual differences
- Evaluate the psychometric properties of measurement scales and the sensitivity of experimental tasks
- Strengthen critical understanding of methodological limitations across experimental designs, including the use of multiple and partial correlation indices
- Develop awareness of the interaction between methodological and ethical issues
- Creatively adapt or develop original experimental materials
- Present and evaluate findings from published studies
- Conduct a pilot study and present and evaluate its findings
- Reflect constructively on group dynamics during collaborative work

General Competences

- Teamwork skills
- Independent work
- Adaptability to new situations
- Generation of new research ideas
- Constructive use of supervisor feedback
- Project design and management
- Awareness of ethical issues

2. COURSE CONTENT

The course's content is linked to the 5 main axes of the curriculum:

Scientific Foundations [1], Scientific Research and Critical Thinking [2], Ethical and Social Responsibility [3], Communication Ability [4], Basic Preparation for Career Decisions and Vocational Rehabilitation [5].

Week 1: Introduction to key topics. Formation of groups

Week 2: 2x2 experimental design. Individual assignments and feedback

Week 3: Hypothesis formulation. Group work and feedback

Week 4: Development of experimental materials

- Week 5:** Group presentations and feedback
- Week 6:** Individual presentations and feedback
- Week 7:** Group presentations and feedback
- Week 8:** Pilot data collection
- Week 9:** Pilot data analysis
- Week 10:** Results presentation and feedback
- Week 11:** Results presentation and feedback
- Week 12:** Writing the research protocol
- Week 13:** Discussion and review

Activities:

- Individual assignments and weekly exercises on conceptual and methodological issues
- Integration of knowledge from previous courses and practical application
- Experimental paradigms in the study of individual differences
- Workshops on experimental design, hypothesis testing, sampling, confounding variables, validity and reliability, ethics
- Group exercises for developing experimental stimuli and research tools
- Adaptation of materials into Greek

Topics:

- Processing of threatening information and cognitive biases
- Semantic priming in understanding individual differences
- The role of attention in emotion regulation
- Acceptance of fake news and individual differences
- Divergent thinking and personality traits
- Unusual perceptual experiences and schizotypy
- The Barnum effect and belief in pseudoscience
- Mind-wandering and the role of working memory

3. INSTRUCTIONAL and LEARNING METHODS - EVALUATION

INSTRUCTION METHOD	Face-to-face/ in-class		
INFORMATION AND COMMUNICATION TECHNOLOGIES USED	<ul style="list-style-type: none"> • Use of bibliographic databases • Use of Word, Excel, PowerPoint 		
TEACHING ORGANIZATION	Activity	Semester workload (hours)	ECTS
	Interactive teaching, lectures, supervision, lab exercises	39	1.56

	Assignment writing and reflective report:	48	1.92
	Study and implementation of research project	41	1.64
	Preparation for student presentations:	20	0.80
	Total	148	6
STUDENT EVALUATION	<p>I. Group research project / protocol (10,000–15,000 words, 60%)</p> <p>II. Oral presentation, participation, activities (30%)</p> <p>III. Reflective report (1,000–1,500 words, 10%)</p>		

4. BIBLIOGRAPHY

Goodhew, S. C., & Edwards, M. (2019). Translating experimental paradigms into individual-differences research. *Consciousness and Cognition*, 69, 14–25.

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Hedge, C., Powell, G., & Sumner, P. (2018). The reliability paradox. *Behavior Research Methods*, 50(3), 1166–1186. <https://doi.org/10.3758/s13428-017-0935-1>

Mac Giolla, E., & Luke, T. J. (2021). Cognitive approach to lie detection. *Applied Cognitive Psychology*, 35, 385–392. <https://doi.org/10.1002/acp.3777>

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