

Psychogenetics

Code: 102584
ECTS Credits: 6

Degree	Type	Year	Semester
2502443 Psychology	OT	4	1

Contact

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Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Prerequisites

Knowledge of biological bases of behaviour and the mind, so it is necessary to know the components and functioning of the nervous and endocrine systems, as well as to understand fundamental genetic mechanisms. A solid knowledge of the basic rules of nervous system functioning, neuropsychological mechanisms underlying psychological processes as well as normal and pathological behaviours allow students to understand the inheritance mechanisms underpinning both behavioural and mental disorders.

Objectives and Contextualisation

Psychology is an incredibly rich discipline, including aspects related to health, society, education, work, justice, etc. Knowledge of behaviour and the mind requires, among others, an understanding of the biological bases that support them. This is the goal of psychobiology in general and of several optional subjects in the 4th year.

Training objectives for Behavioural Genetics are:

- Understand that human behaviour is the result of an aggregation of complex multifactorial traits.
- Understand that some abnormal behavioural traits and some disorders have been linked to single-gene mutations.
- Knowledge of common variations in DNA.
- Knowledge of the main strategies and methodologies used in Behavioural Genomics and Epigenomics.
- Understand the crucial role of interactions (and correlations) between genome and environmental risk factors and between genome and protective environments.
- Understand that the epigenetic code allows certain types of information to be passed to offspring.

- Apply the knowledge acquired in Genetic Counseling, justifying the advice in each case.
- Demonstrate how the knowledge acquired can contribute to achieving the Sustainable Development Goals.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Analyse scientific texts written in English.
- Identify, describe and relate the biology of human behaviour and psychological functions.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Make systematic reviews of the different documentary sources in psychology to collect, order and classify research data and materials.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Use different ICTs for different purposes.
- Work in a team.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Analyse scientific texts written in English.
3. Analyse, synthesize and summarise information from scientific and professional texts.
4. Communicate in an inclusive manner avoiding the use of sexist or discriminatory language.
5. Critically analyse the principles, values and procedures that govern the exercise of the profession.
6. Demonstrate a knowledge of the importance of interaction (and correlation) among generic factors and risk factors and between those and protective environmental factors.
7. Demonstrate an understanding of the importance of the role of the psychologist in a multidisciplinary team for genetic counselling.
8. Explain the explicit or implicit deontological code in your area of knowledge.
9. Handle scientific documentation systems.
10. Identify and describe the main study methods and strategies in behavioural genetics.
11. Identify and describe the potential for genetic therapy.
12. Identify situations in which a change or improvement is needed.
13. Identify the nature of genetic and epigenetic contribution to the principal psychopathologies and neurological diseases.
14. Identify the social, economic and/or environmental implications of academic and professional activities in the area of your knowledge.
15. Plan a literature search or references, both computerized databases and libraries and newspaper archives.
16. Propose new experience-based methods or alternative solutions.
17. Propose new ways of measuring the viability, success or failure of the implementation of innovative proposals or ideas.
18. Use different ICTs for different purposes.
19. Use knowledge acquired to apply to genetic counselling, justifying the action in each case.
20. Weigh up the risks and opportunities of both one's own and other people's proposals for improvement.
21. Work in a team.

Content

Unit 1: Behavioural Genomics and Epigenomics.

Unit 2: The path of complex behaviour begins at the DNA sequence: Strategies and methods

Unit 3: From the genetic code to complex behaviour

Unit 4: Ethics and genetics.

Unit 5: Genetic Counselling.

Unit 6: How could we...?

Methodology

Depending on the case, seminars will be carried out and activities based on student-focused active learning methodologies involving challenge-based learning are also proposed.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes (whole group)	24	0.96	6, 10, 11
Seminars	12	0.48	6, 7, 10, 11, 19
Type: Supervised			
Elaborating solutions, implementing solution, doing presentations ,	20	0.8	1, 4, 6, 10, 12, 20, 16, 17, 18
Group-based work	22.5	0.9	
Tutorials (on line and one-to-one)	1.5	0.06	
Type: Autonomous			
Analysis of documents, surveys and interviews	8	0.32	3, 16, 17
Documentation	10	0.4	3, 9, 15, 21
Reading scientific texts	20	0.8	2, 18
Study	30	1.2	6, 7, 10, 11, 19

Assessment

Assessment (learning evidences)

The assessment guidelines of the Faculty of Psychology can be found at the following link:

<https://www.uab.cat/web/estudiar/graus/graus/avaluacions-1345722525858.html>

According to "The assessment guidelines of the Faculty of Psychology" (see above), the subject will be assessed based on the following learning evidences (EV):

EV1: How could we ...? (CBL methodology) Learning evidences transversally collected from each training activity of each of the phases. And self-reflection on the process and progress of learning. challenge based learning

-EV1a: Specifically, how could we improve ...? (team-based work) (5 % of the final grade). The assignment is scheduled for week 5

-EV1b: How have we investigated it? (team-based work) (20 % of the final grade). The assignment is scheduled for week 7

-EV1c: We experiment and give feedback (team-based work) (30 % of the final grade). The assignment and oral presentation are scheduled for weeks 14.

EV2: (45% of the final grade): Content of course (open questions) will be assessed. The test takes place the second evaluation week.

Total grade

The total grade is obtained from the weighted average of EV1 to EV2 grades. In order to pass the course, it is mandatory that the weighted average of all grades (EV1 to EV2) will be equal to or greater than 5 and the weighted average of EV2 is higher 3.5 (out 10).

Resit

In order to be allowed to do the reassessment test, the students are required to have completed learning evidences with a weight equal or greater than 2/3 for the whole subject and have obtained a mark lower 5 (out of 10) in totalgrade.Reassessment will consist of an exam of open questions about all units. EV1a and EV1c are excluded of reassessment. The maximum grade that can be obtained in this recovery is 5 (out of 10).

In the single assessment, the same resit system will be applied.

Subject passed

The subject will be considered passed when the weighted average of all grades (EV1 to EV2) is equal to or greater than 5 and the grade of EV2 is equal or higher 3.5 (out 10) or the reassessment qualification is 5. In case of not achieving the established requirements the maximum grade to consign in the academic transcript will be of 4.5 points.

Definition of "Non-assessable student"

Students who have not performed the assessment test (EV2) or have completed learning evidences with a weight lower than 40% for the whole subject will be marked as "Non-assessable" Grade.

No unique final synthesis test for students who enroll for the second time or more is anticipated.

SINGLE ASSESSMENT ACTIVITIES

Name and description	Weight	Duration in hours (Face-to-face evaluation)	Test or/and a schedule
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EV1a: Specifically, how could we improve ...?	5 %	Oral presentation : 20 minutes 2 hours	During the secc evaluation week
EV1b: How have we investigated it?	20%		
EV1c: We experiment and give feedback	30 %		
EV2: Written Test (Open questions)	45 %		
All learning evidences (assignments) are taken individually and delivered on the day of the written test (EV2).			

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
EV1a: Specifically, how could we improve ...? (team-based)	5	0	0	5, 1, 6, 8, 10, 12, 20, 16, 21
EV1b: How we have investigated it? (team-based)	20	0	0	5, 2, 3, 6, 9, 10, 13, 15, 21, 18
EV1c: We experiment and give feedback (team-based)	30	0	0	5, 2, 3, 4, 6, 10, 14, 20, 17, 21, 18
EV2: Exam	45	2	0.08	6, 7, 10, 11, 13, 19

Bibliography

FUNDAMENTAL BIBLIOGRAPHY

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Champagne, Frances A: Beyond the maternal epigenetic legacy. *Nat Neurosci.* 21:773-774, 2018

Halldorsdottir, Thorhildur; Binder, Elisabeth B: Gene × Environment Interactions: From Molecular Mechanisms to Behavior. *Annu Rev Psychol.* 68 :215- 241:215-241, 2017

Holden, Constance: Parsing the genetics of behavior. *Science* 322 (5903) 892-895, 2008

Isles, Anthony R: Neural and behavioral epigenetics; what it is, and what is hype. *Genes, Brain and Behavior* 14(1): 64-72, 2015

Martí Carbonell, Sunsi; Darbra, Sònia : Genètica del comportament. Bellaterra: Servei de Publicacions UAB. 2006.

Miller, Glenn: The seductive allure of behavioral epigenetics. *Science* 329(5987) : 24-27, 2010

Sweatt, J David: Experience-dependent epigenetic modifications in the central nervous system. *Biological Psychiatry* 65:191-197, 2009

COMPLEMENTARY BIBLIOGRAPHY

Clayton, Janine A: Applying the new SABV (sex as a biological variable) policy to research and clinical care.
Physiology & Behavior 187: 2-5, 2018

Software

Search engine (Edge, Google, ...)

Text Editor (Word, ...)

Presentation Designer (PowerPoint, ...)

Campus Virtual UAB (Moodle): Basic communication tool and material repository.