



Information about the subject

Degree: Official Master's Degree in Comprehensive Care of People with an Intellectual Disability

Faculty: Faculty of Psychology

Code: 1570002 **Name:** Biological and Neuropsychological Bases of People with Intellectual Disability

Credits: 6,00 **ECTS** **Year:** 1 **Semester:** 1

Module: BASIC TRAINING IN INTELLECTUAL DISABILITY

Subject Matter: Biological and neuropsychological bases of intellectual disability **Type:** Compulsory

Department:

Type of learning: Blended

Languages in which it is taught: Spanish

Lecturer/-s:

DISCAP Maria Motos Muñoz (Responsible Lecturer)

maria.motos@ucv.es

Ivan Franco Castellano

ivan.franco@ucv.es



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

Module organization

BASIC TRAINING IN INTELLECTUAL DISABILITY

Subject Matter	ECTS	Subject	ECTS	Year/semester
Theoretical frameworks, quality of life and positive behavioural support	6,00	Theoretical Frameworks, Quality of Life and Positive Behavioural Support	6,00	1/1
Biological and neuropsychological bases of intellectual disability	6,00	Biological and Neuropsychological Bases of People with Intellectual Disability	6,00	1/1

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 Know the concept and classification of intellectual disability.
- R2 Know the main systems of diagnosis and functional evaluation of intellectual disability.
- R3 Know the etiology of the main types of intellectual disabilities.
- R4 Know the bio-psycho-social model of application in diagnosis and evaluation.



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC	Weighting			
	1	2	3	4
CB8 The ability to integrate knowledge and deal with the complexity of making judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.				X
CB9 The ability to communicate their findings and the ultimate knowledge and reasons behind them to specialized and non-specialized audiences in a clear and unambiguous manner.				X
GENERAL				Weighting
				1 2 3 4
CG1 Information management skills.				X
CG11 Analysis and synthesis skills.				X
SPECIFIC				Weighting
				1 2 3 4
CE9 The ability to use the person-centered planning approach as a benchmark for intervention.				X
CE10 Design interventions based on behavioral and cognitive-behavioral modification techniques.				X
CE11 Know and be able to distinguish the main behavioral disorders most common in people with intellectual disabilities.				X
CE12 The ability to perform a functional analysis of the altered behaviors and to develop intervention guidelines.				X



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

- | | | |
|------|--|---|
| CE13 | The ability to identify limitations in cognitive functioning and adaptive behavior and in cognitive, neurological and neuropsychological functions of people with intellectual disability. | X |
| CE14 | Identifying the main etymological multi-causal factors of intellectual disability as well as the main syndromes. | X |
| CE15 | Knowledge of the main prevention guidelines based on medical, psychological and social factors of the family and social context. | X |
| CE16 | Knowledge of the learning processes and alterations that people with intellectual disabilities experience. | X |

TRANSVERSAL	Weighting			
	1	2	3	4
CT3	The ability to update the knowledge and skills related to this framework of action.			X
CT7	Oral and written communication skills.			X
CT10	Self-critical attitude, that is, assessing one's own performance by knowing one's own competences and limitations, putting possible frustrations in perspective, showing interest in the quality of one's own performance and developing systems that guarantee the quality of one's own services.		X	



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4	40,00%	Carrying out objective tests
R1, R2, R3, R4	20,00%	Individual monitoring of attendance in face-to-face and practical sessions
R1, R2, R3, R4	10,00%	Individual monitoring of active participation in face-to-face and practical sessions
R1, R2, R3, R4	30,00%	Realization of individual theoretical-practical activities assessable

Observations

EVALUATION CRITERIA

· In order to pass the course, the student must pass the different assessment systems separately (attendance and active participation, theoretical-practical activities and final objective test).

· The continuous assessment will be a compendium of evidence of practical participation in the teaching sessions, individual work as well as the presentation of the same, and the development of a final objective test.

CRITERIA FOR THE AWARDING OF HONOURS:

· The mention of honours may be awarded to students who have obtained a grade equal to or higher than 9.5 and demonstrate levels of excellence in practical activities, as well as in attendance and active participation in class. In accordance with the general regulations, only one honourable mention may be awarded for every 20 students, not per fraction of 20, with the exception of groups of less than 20 students in total, in which one honourable mention may be awarded.



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded.

Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- | | |
|----|--|
| M1 | M1 Presentation of content by teachers, analysis of competencies, explanation and demonstration of capacities, skills and knowledge in person or synchronously through videoconferences. |
| M2 | M2 Group work sessions supervised by the teacher, case studies, diagnostic analysis, problems, field study, visits to resources, data search (libraries, online, Internet, etc.) Significant construction of knowledge through the interaction and activity of the student. |
| M4 | M4 Study of the student -with / without support on the platform- that includes individual preparation of readings, reports, evaluations, problem solving, case analysis, programs, memories, etc. to expose or deliver in theoretical classes, practical classes and / or tutorials. |
| M8 | M8 Individual personalized attention during the training period and / or orientation carried out by a tutor in order to review and discuss the materials and topics presented in the sessions, seminars, readings, completion of work, etc. |
| M9 | M9 Set of oral and / or written tests used in the initial, formative or summative evaluation of the student. |



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
CLASES PRESENCIALES M1	R1, R2, R3, R4	35,00	1,40
TUTORÍA INDIVIDUAL M8	R1, R2, R3, R4	2,00	0,08
ACTIVIDADES DE EVALUACIÓN M9	R1, R2, R3, R4	3,00	0,12
TOTAL		40,00	1,60

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
TRABAJO AUTONÓMO INDIVIDUAL (CON O SIN APOYO EN PLATAFORMA) M4	R1, R2, R3, R4	110,00	4,40
TOTAL		110,00	4,40



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Unit 1.	<ul style="list-style-type: none">· Biological and neuropsychological bases of Intellectual Disability· Etiology, syndromes and behavioral phenotypes in Intellectual Disability
Unit 2.	<ul style="list-style-type: none">· Neuropsychological evaluation and diagnosis of Intellectual Disability· Comorbidity in Intellectual Disability
Unit 3.	<ul style="list-style-type: none">· Mental Health and Intellectual Disability
Unit 4.	<ul style="list-style-type: none">· Positive Behavioral Support and Functional Behavior Analysis

Temporary organization of learning:

Block of content	Number of sessions	Hours
Unit 1.	5,00	10,00
Unit 2.	5,00	10,00
Unit 3.	5,00	10,00
Unit 4.	5,00	10,00



References

- Asociación Americana de Retraso Mental (traducción de Verdugo, M.A. y Jenaro, C.) (2004) Retraso mental: definición, clasificación y sistemas de apoyo. 10^a revisión. Madrid, Alianza Editorial.
- American Psychiatric Association. (2013). DSM-5. Manual diagnóstico y estadístico de los trastornos mentalesn 5^a Edición. Ed.Panamericana
- Arnedo Montoro, M. (2012) Neuropsicología. A través de casos clínicos. Editorial: Panamericana Artigas-Pallarés. J, y Narbona, J. (2011) Trastornos del neurodesarrollo. Ediciones Viguera
- Canal R. y Martín M.V. (Coord.) (2002). Apoyo conductual positivo. Manuales de Trabajo en Centros de Atención a personas con Discapacidad de la Junta de Castilla y León . Conserjería de Sanidad y Bienestar Social.
www.jcyl.es/scsiau/Satellite/up/es/Institucional/Page/PlantillaDetalleContenido/1141754560414/Redaccion/1138973912567/_?asm=jcyl&tipoLetra=x-small
- Dennis Rains (2004). Principios de Neuropsicología Humana. Editorial McGraw-Hill
- De Vicente Perez, Francisco (2010) Psicología del Aprendizaje. Editorial: Síntesis
- Domjan, M. (2003). Principios de aprendizaje y Conducta. Madrid, Thomson
- García-Alba, J., Esteba-Castillo, S y Viñas-Jornet, M (2018). Neuropsicología de la discapacidad intelectual de origen genético. Manuales Campos de intervención neuropsicológica. Editorial: Síntesis.
- Jiménez, M. (Coord.) (1997). Psicopatología Infantil. Archidona, Málaga: Ediciones Aljibe
- Jordan, R. (2012) Autismo con discapacidad intelectual grave. Guía para padres y profesionales. Autismo Ávila
- Kolb B. y Whishaw I.Q. (2006). Fundamentos de Neuropsicología Humana. Madrid: Médica Panamericana
- Labrador, F.J. (2008). Técnicas de modificación de conducta. Madrid. Pirámide
- Marina, J.A. (2011). Como aprende el cerebro. Editorial Ariel
- Mazzoni, P., Rowland, L.P. (2003) Manual de neurología. Mc Graw Hill Interamericana
- Muñoz J.M., Tirapu, J., (2001). Rehabilitación Neuropsicológica. Madrid. Editorial Síntesis.
- Navarro, J.F.; Espert, R. (1995). Neuropsicología:casos clínicos y pruebas razonadas de autoevaluación. Editorial Siglo XXI de España Editores
- Navarro, J.F. (2000). Bases biológicas de las psicopatologías. Editorial Pirámide
- Novell Alsina, R., Rueda Quiltlet, P., Salvador Carulla, L., & Forgas Farre, E. (2012). Salud mental y alteraciones de la conducta en las personas con discapacidad intelectual. Guía práctica para técnicos y cuidadores.
- Peña-Casanova J. (2007). Neurología de la conducta y neuropsicología. Madrid: Médica Panamericana
- Rizzolati, G.; Singaglia, C. (2006). Las neuronas espejo. Editorial Paidós Ibérica
- Roselli, M., Matute, E. y Ardila, A. (2010) Neuropsicología del desarrollo infantil. Manual Moderno
- Tirapu, J.; Ríos, M.; Maestu F. (2011). Manual de Neuropsicología. Editorial Viguera
- Verdugo, M. A., Schalock, R. L., Thompson, J., & Guillén, V. (2011). Discapacidad Intelectual.



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

Definición, clasificación y sistemas de apoyo. American Association of Intellectual and Developmental disabilities; Alianza.

ARTÍCULOS RECOMENDADOS

Cardillo, R., Menazza, C., & Mammarella, I. (2018). Visuoconstructive abilities and visuospatial memory in autism spectrum disorder without intellectual disability: Is the role of local bias specific to the cognitive domain tested?. *Neuropsychology*, 32(7), 822-834. doi: 10.1037/neu0000472

Akshoomoff, N., Joseph, R., Taylor, H., Allred, E., Heeren, T., O'Shea, T., & Kuban, K. (2017). Academic Achievement Deficits and Their Neuropsychological Correlates in Children Born Extremely Preterm. *Journal Of Developmental & Behavioral Pediatrics*, 38(8), 627-637. doi: 10.1097/dbp.0000000000000479

Basten, I., Boada, R., Taylor, H., Koenig, K., Barrionuevo, V., Brandão, A., & Costa, A. (2018). On the Design of Broad-Based Neuropsychological Test Batteries to Assess the Cognitive Abilities of Individuals with Down Syndrome in the Context of Clinical Trials. *Brain Sciences*, 8(12), 205. doi: 10.3390/brainsci8120205

Battini, R., Chieffo, D., Bulgheroni, S., Piccini, G., Pecini, C., & Lucibello, S. et al. (2018). Cognitive profile in Duchenne muscular dystrophy boys without intellectual disability: The role of executive functions. *Neuromuscular Disorders*, 28(2), 122-128. doi: 10.1016/j.nmd.2017.11.018

Celeste, P., Esteban, V., Mariana, L., María José, G., Florencia, B., & Christy, E. et al. (2018). Continuous performance test in children with intellectual disability and attention deficit hyperactivity disorder. *Applied Neuropsychology: Child*, 1-7. doi: 10.1080/21622965.2018.1434077

Edgin, J., Pennington, B., & Mervis, C. (2010). Neuropsychological components of intellectual disability: the contributions of immediate, working, and associative memory. *Journal Of Intellectual Disability Research*, 54(5), 406-417. doi: 10.1111/j.1365-2788.2010.01278.x

García-Alba, J., Esteba-Castillo, S., Castellanos López, M., Rodríguez Hidalgo, E., Ribas Vidal, N., Moldenhauer Díaz, F., & Novell-Alsina, R. (2017). Validation and Normalization of the Tower of London-Drexel University Test 2nd Edition in an Adult Population with Intellectual Disability. *The Spanish Journal Of Psychology*, 20. doi: 10.1017/sjp.2017.30

Mammarella, I., Cardillo, R., & Zoccante, L. (2019). Differences in visuospatial processing in individuals with nonverbal learning disability or autism spectrum disorder without intellectual disability. *Neuropsychology*, 33(1), 123-134. doi: 10.1037/neu0000492

Planche, P., & Lemonnier, E. (2012). Children with high-functioning autism and Asperger's syndrome: Can we differentiate their cognitive profiles?. *Research In Autism Spectrum Disorders*, 6(2), 939-948. doi: 10.1016/j.rasd.2011.12.009

Rosser, T., Edgin, J., Capone, G., Hamilton, D., Allen, E., & Dooley, K. et al. (2018). Associations Between Medical History, Cognition, and Behavior in Youth With Down Syndrome: A Report From the Down Syndrome Cognition Project. *American Journal On Intellectual And Developmental Disabilities*, 123(6), 514-528. doi: 10.1352/1944-7558-123.6.514

Soorya, L., Leon, J., Trelles, M., & Thurm, A. (2017). Framework for assessing individuals with rare genetic disorders associated with profound intellectual and multiple disabilities (PIMD): the example of Phelan McDermid Syndrome. *The Clinical Neuropsychologist*, 32(7), 1226-1255. doi: 10.1080/13854046.2017.1413211



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

- Stadskleiv, K., Jahnsen, R., Andersen, G., & von Tetzchner, S. (2017). Neuropsychological profiles of children with cerebral palsy. *Developmental Neurorehabilitation*, 21(2), 108-120. doi: 10.1080/17518423.2017.1282054
- Karalunas SL, Hawkey E, Gustafsson H, Miller M, Langhorst M, Cordova M, Fair D, Nigg JT (2018). Overlapping and Distinct Cognitive Impairments in Attention-Deficit/Hyperactivity and Autism Spectrum Disorder without Intellectual Disability. *J Abnorm Child Psychol.* Nov;46(8):1705-1716. doi:10.1007/s10802-017-0394-2.
- Ajmone, P., Rigamonti, C., Dall'Ara, F., Monti, F., Vizziello, P., & Milani, D. et al. (2014). Communication, cognitive development and behavior in children with Cornelia de Lange Syndrome (CdLS): Preliminary results. *American Journal Of Medical Genetics Part B: Neuropsychiatric Genetics*, 165(3), 223-229. doi: 10.1002/ajmg.b.32224
- Demily, C., Rigard, C., Peyroux, E., Chesnoy-Servanin, G., Morel, A., & Franck, N. (2016). «Cognitus & Moi»: A Computer-Based Cognitive Remediation Program for Children with Intellectual Disability. *Frontiers In Psychiatry*, 7. doi: 10.3389/fpsyg.2016.00010
- Edgin, J., Anand, P., Rosser, T., Pierpont, E., Figueiroa, C., & Hamilton, D. et al. (2017). The Arizona Cognitive Test Battery for Down Syndrome: Test-Retest Reliability and Practice Effects. *American Journal On Intellectual And Developmental Disabilities*, 122(3), 215-234. doi: 10.1352/1944-7558-122.3.215
- Hithersay, R., Hamburg, S., Knight, B., & Strydom, A. (2017). Cognitive decline and dementia in Down syndrome. *Current Opinion In Psychiatry*, 30(2), 102-107. doi: 10.1097/yco.0000000000000307
- Hronis, A., Roberts, L., & Kneebone, I. (2017). A review of cognitive impairments in children with intellectual disabilities: Implications for cognitive behaviour therapy. *British Journal Of Clinical Psychology*, 56(2), 189-207. doi: 10.1111/bjcp.12133
- Hronis, A., Roberts, L., & Kneebone, I. (2017). A review of cognitive impairments in children with intellectual disabilities: Implications for cognitive behaviour therapy. *British Journal Of Clinical Psychology*, 56(2), 189-207. doi: 10.1111/bjcp.12133
- Huddleston, L., Visootsak, J., & Sherman, S. (2014). Cognitive aspects of Fragile X syndrome. *Wiley Interdisciplinary Reviews: Cognitive Science*, 5(4), 501-508. doi: 10.1002/wcs.1296
- Koriakin, T., Mccurdy, M., Papazoglou, A., Pritchard, A., Zabel, T., Mahone, E., & Jacobson, L. (2013). Classification of intellectual disability using the Wechsler Intelligence Scale for Children: Full Scale IQ or General Abilities Index?. *Developmental Medicine & Child Neurology*, 55(9), 840-845. doi: 10.1111/dmcn.12201
- Kuske, B., Wolff, C., Gövert, U., & Müller, S. (2017). Early detection of dementia in people with an intellectual disability - A German pilot study. *Journal Of Applied Research In Intellectual Disabilities*, 30, 49-57. doi: 10.1111/jar.12347
- Liogier d'Ardhuy, X., Edgin, J., Bouis, C., de Sola, S., Goeldner, C., & Kishnani, P. et al. (2015). Assessment of Cognitive Scales to Examine Memory, Executive Function and Language in Individuals with Down Syndrome: Implications of a 6-month Observational Study. *Frontiers In Behavioral Neuroscience*, 9. doi: 10.3389/fnbeh.2015.00300
- Merchán-Naranjo, J., Boada, L., del Rey-Mejías, Á., Mayoral, M., Llorente, C., Arango, C., &



Year 2024/2025

1570002 - Biological and Neuropsychological Bases of People with Intellectual Disability

Parellada, M. (2016). La función ejecutiva está alterada en los trastornos del espectro autista, pero esta no correlaciona con la inteligencia. *Revista De Psiquiatría Y Salud Mental*, 9(1), 39-50. doi: 10.1016/j.rpsm.2015.10.005

Scott, M., Hunter, S., Joseph, R., O'Shea, T., Hooper, S., & Allred, E. et al. (2017). Neurocognitive Correlates of Attention-Deficit Hyperactivity Disorder Symptoms in Children Born at Extremely Low Gestational Age. *Journal Of Developmental & Behavioral Pediatrics*, 38(4), 249-259. doi: 10.1097/dbp.0000000000000436

Stadskleiv, K., Jahnsen, R., Andersen, G., & von Tetzchner, S. (2017). Neuropsychological profiles of children with cerebral palsy. *Developmental Neurorehabilitation*, 21(2), 108-120. doi: 10.1080/17518423.2017.1282054

Zilli, T., Zanini, S., Conte, S., Borgatti, R., & Urgesi, C. (2015). Neuropsychological assessment of children with epilepsy and average intelligence using NEPSY II. *Journal Of Clinical And Experimental Neuropsychology*, 37(10), 1036-1051. doi: 10.1080/13803395.2015.1076380