



## Information about the subject

**Degree:** Bachelor of Science Degree in Psychology

**Faculty:** Faculty of Psychology

**Code:** 291202 **Name:** Psychometrics

**Credits:** 6,00 **ECTS Year:** 2 **Semester:** 1

**Module:** RESEARCH FUNDAMENTALS AND METHODOLOGY

**Subject Matter:** STATISTICS **Type:** Basic Formation

**Field of knowledge:** Health Sciences

**Department:** -

**Type of learning:** Classroom-based learning / Online

**Languages in which it is taught:** Spanish

### Lecturer/-s:

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## Module organization

### RESEARCH FUNDAMENTALS AND METHODOLOGY

Subject Matter	ECTS	Subject	ECTS	Year/semester
STATISTICS	12,00	Fundamentals and Analysis of Data	6,00	1/1
		Psychometrics	6,00	2/1
RESEARCH METHODS, DESIGNS AND TECHNIQUES	6,00	Research Methodology	6,00	4/1
MODERN LANGUAGE	6,00	Scientific English	6,00	1/1

## Recommended knowledge

Having acquired the competencies established in the first module of methodology.



## 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 Acquiring a correct mental representation of the theoretical-practical contents of the module.
- R2 Working in groups in order to carry out different practical activities such as the creation and application of a test in order to measure and psychological construct.
- R3 Obtaining and organizing information from different sources (journals, books, videos, Internet) in order to create a test or for other purposes.
- R4 Using specific software for the resolution of problems related to the contents of the module.
- R5 Assessing the different quality criteria of a psychological test.
- R6 Understanding the importance of the information offered in a test's manual and using it correctly.



## 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):

SPECIFIC		Weighting			
		1	2	3	4
CE4	Analyzing and measuring variables (personality, intelligence and other aptitudes) and cognitive, emotional, psychobiological and behavioral processes .				X
CE13	Designing and adapting tools, products and services to requirements and restrictions.				X
CE14	Contrasting and checking tools, products and services (prototypes and pilot studies).				X
CE26	Writing oral and written reports.			X	
CE27	Knowing and adapting to the psychology code of ethics.				X
CE35	To know research methods and data analysis techniques.		X		
TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Capacity to analyze and synthesize.		X		
CT2	Capacity to organize and plan.		X		
CT3	Mastering Spanish oral and written communication.		X		
CT5	Knowing and applying Basic ITC skills related to Psychology.				X
CT6	Capacity to manage information (capacity to look for and analyze information coming from different types of sources)		X		
CT7	Problem solving.				X



CT9 Capacity to work in team.

x

CT14 Critical capacity.

x

CT15 Ethics.

x

CT18 Capacity to produce new ideas (creativity).

x



## Assessment system for the acquisition of competencies and grading system

### In-class teaching

Assessed learning outcomes	Granted percentage	Assessment method
R1, R3, R4, R5, R6	60,00%	Oral and/or written tests employed in initial, training and/or summative student assessment.
R1, R2, R4, R6	10,00%	Attendance and active participation: lessons, group assignments and tutoring sessions. It will be monitored and registered by the teacher.
R1, R2, R3, R4, R5	30,00%	Group assignments.

### Observations

Notes: The written exam will consist of a theoretical and a practical part. A minimum grade must be obtained in the written exam and the group work so that they can be accumulated (50% of the total grade that can be chosen with each evaluation system). Criteria for the award of honors: Obtain 9.0 points or more and perform a discriminatory test among applicants

### Online teaching

Assessed learning outcomes	Granted percentage	Assessment method
R1, R3, R4, R5, R6	70,00%	Final evaluation consisting of essay questions and hypothetical scenarios.
R1, R3, R4, R5	5,00%	Submitted tasks
	0,00%	Periodical assessment through questionnaires
R1, R2, R3, R4, R5, R6	25,00%	Attendance and participation in synchronic communication activities.

### Observations

Notes: The written exam will consist of a theoretical and a practical part. A minimum grade must be obtained in the written exam and the group work so that they can be accumulated (50% of the total grade that can be chosen with each evaluation system). Criteria for the award of honors: Obtain 9.0 points or more and perform a discriminatory test among applicants



## Learning activities

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

- M1 Teacher presentation of contents, competency analysis, explanation and demonstration of capacities, abilities and knowledge in the classroom (presential modality).
- M2 Teacher-supervised groupwork sessions: case studies, diagnostic tests, problems, fieldwork, IT room, visits, data searches, libraries, web, Internet, etc. Building knowledge significantly through interaction and student activities (presential modality).
- M3 Supervised monographic sessions with shared participation.
- M4 Application of interdisciplinary knowledge.
- M6 Personalized attention in small groups. Training and/or orientation period by a teacher aimed at revising and discussing the materials and topics presented in the lessons, seminars, lectures, assignments, etc.
- M7 Set of oral and/or written tests employed in initial, training or summative assessment of the student.
- M8 Group preparation of readings, essays, problem resolution, seminars, assignments, reports, etc. to be presented or handed in during theory lessons, practical lessons and/or tutoring sessions in small groups. Tasks done on the platform or other virtual spaces.
- M9 Students' independent study: individual preparation of readings, essays, problem resolution, seminars, assignments, reports, etc. to be presented or handed in during theory lessons, practical lessons and /or small-group tutoring sessions. Tasks on the platform or other virtual spaces.
- M11 Teacher presentation of contents, competencies analysis, explanation and demonstration of capacities, abilities and knowledge on the virtual classroom.
- M12 Group work sessions via chat moderated by the teacher. Case studies –both real and fictional– aimed at building knowledge through interaction and students' activities. Critical analysis of values and social commitment.
- M13 Monographic sessions throughout the course, focused on current aspects and applications of the subject.



- M14 Set of oral and/or written tests employed in initial, training or summative assessment of the student.
- M15 Student's individual study: individual preparation of readings, essays, problem resolution, seminars, assignments, reports, etc. to be discussed or turned in in electronic format.
- M16 Individualized attention for the monitoring and orientation in the learning process, performed by a tutor in order to revise and discuss the materials and topics, seminars, readings and assignments, etc.
- M17 Group preparation of readings, essays, problem resolution, seminars, assignments, reports, etc. to be discussed or handed in.
- M18 Participation and contributions to discussion forums related to the subject and moderated by the module's teacher.
- M19 Problem resolution, comments, reports to be handed in according to the deadlines throughout the course.





## IN-CLASS LEARNING

### IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
<b>ON-CAMPUS CLASS</b> Teacher presentation of contents, analysis of competences, explanation and in-class display of skills, abilities and knowledge. M1, M2, M8, M11, M18, M19	R1, R2, R3, R4, R5, R6	37,75	1,51
<b>PRACTICAL CLASSES</b> Group work sessions supervised by the professor. Case studies, diagnostic tests, problems, field work, computer room, visits, data search, libraries, on-line, Internet, etc. Meaningful construction of knowledge through interaction and student activity. M2, M4, M6, M17, M18, M19	R2, R4, R5	15,00	0,60
<b>SEMINAR</b> Supervised monographic sessions with shared participation. M3, M4, M11, M13	R1, R3, R6	1,50	0,06
<b>GROUP WORK EXHIBITION</b> Application of multidisciplinary knowledge. M9, M11, M12, M17	R2, R3, R4, R5	1,75	0,07
<b>OFFICE ASSISTANCE</b> Personalized and small group attention. Period of instruction and/or orientation carried out by a tutor to review and discuss materials and topics presented in classes, seminars, papers, etc. M6, M16, M19	R1, R2, R3, R4, R5, R6	1,50	0,06
<b>ASSESSMENT</b> Set of oral and/or written tests used in initial, formative or additive assessment of the student. M7, M8, M14, M18	R1, R2, R3, R4, R5, R6	2,50	0,10
<b>TOTAL</b>		<b>60,00</b>	<b>2,40</b>



## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
<b>GROUP WORK</b> Group preparation of readings, essays, problem solving, seminars, papers, reports, etc. to be presented or submitted in theoretical lectures, practical and/or small-group tutoring sessions. Work done on the university e-learning platform M2, M3, M6, M12	R1, R2, R3, R4, R5, R6	32,50	1,30
<b>INDEPENDENT WORK</b> Student study: Individual preparation of readings, essays, problem solving, seminars, papers, reports, etc. to be presented or submitted in theoretical lectures, practical and/or small-group tutoring sessions. Work done on the university e-learning platform. M6, M9, M15, M19	R1, R2, R3, R4, R5, R6	57,50	2,30
<b>TOTAL</b>		<b>90,00</b>	<b>3,60</b>



## ON-LINE LEARNING

### SYNCHRONOUS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Virtual session (distance learning) M1, M2, M8, M11, M18, M19	R1, R2, R3, R4, R5, R6	38,00	1,52
Virtual practical session (distance learning) M2, M4, M6, M17, M18, M19	R2, R4, R5	15,00	0,60
Seminar and virtual videoconference (distance learning) M3, M4, M11, M13	R1, R3, R6	0,40	0,02
In-person or virtual assessment (distance learning) M7, M8, M14, M18	R1, R2, R3, R4, R5, R6	2,00	0,08
Individual tutoring sessions (distance learning) M6, M16, M19	R1, R2, R3, R4, R5, R6	1,50	0,06
Discussion forums (distance learning) M18	R1, R2, R3, R4, R5, R6	0,75	0,03
Continuous assessment activities (distance learning) M2, M12, M14, M18, M19	R1, R2, R3, R4, R5, R6	1,60	0,06
<b>TOTAL</b>		<b>59,25</b>	<b>2,37</b>

### ASYNCHRONOUS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Individual work activities (distance learning) M6, M9, M15, M19	R1, R2, R3, R4, R5, R6	58,25	2,33
Teamwork (distance learning) M2, M3, M6, M12	R1, R2, R3, R4, R5, R6	32,50	1,30
<b>TOTAL</b>		<b>90,75</b>	<b>3,63</b>



## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

### Theoretical contents:

Content block	Contents
I	Introduction to psychological measurement
II	Test theory
III	Evaluation of the metric quality of measuring instruments Assignment, transformation and matching scores
IV	Introduction to the methods and main scaling techniques Techniques for the construction of psychological scales
V	Adaptation of tests for use in different languages and cultures
VI	Introduction to item response theory



## Temporary organization of learning:

Block of content	Number of sessions	Hours
I	3,00	6,00
II	2,00	4,00
III	17,00	34,00
IV	5,00	10,00
V	2,00	4,00
VI	1,00	2,00

## References

### Basic References

Barbero, I. (Coord.), Vila, E. y Holgado, F.P. (2010). Psicometría. Madrid: Sanz y Torres.  
Barbero, I., García, E., Vila, E. y Holgado, F.P. (2010). Problemas resueltos de Psicometría. Madrid: Sanz y Torres.  
Barbero, I., Vila, E. y Holgado, F.P. (2010). Formulario de Psicometría y tablas estadísticas. Madrid: Sanz y Torres.  
Muñiz, J. (1996). Psicometría. Madrid: Universitas.

### Supplementary References

Alaminos, A. y Castejón, J. L. (2006). Elaboración, análisis e interpretación de encuestas, cuestionarios y escalas de opinión. Editorial Marfil, S. A.  
Levy, J. y Varela, J. (2003). Análisis Multivariable para las Ciencias Sociales. Pearson-Prentice hall.



## Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

**Situation 1: Teaching without limited capacity** (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

**Situation 2: Teaching with limited capacity** (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

### 1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

☒ Microsoft Teams

☒ Kaltura



## **Situation 3: Confinement due to a new State of Alarm.**

In this case, the following changes are made:

### **1. Educational Activities of Onsite Work:**

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

☒ Microsoft Teams

☒ Kaltura

Explanation about the practical sessions:



## 2. System for Assessing the Acquisition of the competences and Assessment System

### ONSITE WORK

#### Regarding the Assessment Tools:

☒ The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

☐ The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

#### Comments to the Assessment System:





## ONLINE WORK

### Regarding the Assessment Tools:

☒ The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

☐ The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

### Comments to the Assessment System: