

**COURSE DATA****Data Subject**

Code	43080
Name	Data processing methods in physiology
Cycle	Master's degree
ECTS Credits	6.0
Academic year	2019 - 2020

Study (s)

Degree	Center	Acad. year	Period
2141 - Master's Degree in Physiology	Faculty of Medicine and Odontology	1	First term

Subject-matter

Degree	Subject-matter	Character
2141 - Master's Degree in Physiology	1 - Methodology for research in physiology	Obligatory

Coordination

Name	Department
CIBRIAN ORTIZ DE ANDA, ROSA MARIA	190 - Physiology

SUMMARY

The realization of any investigation, such as those included in the field of Physiology, requires a series of steps, from the setting of the objectives to the verification of their achievement. Among them is the management and treatment of experimental data, which are those that, among others, are developed in this subject, for the correct obtaining of the results.

Therefore, the objectives of the subject are:

-Know the different steps to follow to carry out a scientific investigation and to present it as a scientific result.

-Acquire sufficient knowledge to allow the student, in their future research work, to carry out an adequate treatment of experimental data.



-Know the field of application and the proper use of the different statistical tests for a correct extrapolation from the sample information to that of the population.

-Fluently manage one of the most widely used statistical programs today, the SPSS.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

There are no prerequisites for taking the course.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

2141 - Master's Degree in Physiology

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Be able to integrate new technologies in their professional and/or research work.
- Be able to access to information tools in other areas of knowledge and use them properly.
- To acquire a critical attitude that allows you to make reasoned judgments and defend them with rigor and tolerance.
- Assess the need to complete the scientific training, in languages, computer science, ethics, etc., attending conferences or courses and/or carrying out complementary activities, self-evaluating the contribution that the performance of these activities implies for their comprehensive training.
- Employ the basic tools for the treatment of experimental data in biomedical research.
- Differentiate between the statistical methods to carry out the correct data analysis and handle them in a practical context of an investigation, as well as adequately present the results.

**LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

- Apply the scientific method in solving experimental work.
- Work with information sources, both traditional and through new Internet technologies.
- Synthesize and communicate scientific information.
- Acquire sufficient knowledge to allow the student, in his future research work in the field of Physiology, to carry out an adequate treatment of experimental data, both with the limitation of errors associated with direct and indirect measurements.
- Know the field of application and the proper use of the different statistical tests for a correct extrapolation of the information from the sample to that of the population.-Fluently manage the SPSS Program, once the statistical test or tests to be used are known, given the importance of adequate statistical analysis in research work.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	33,00	100
Tutorials	4,00	100
Laboratory practices	3,00	100
Other activities	2,00	100
Development of group work	24,00	0
Study and independent work	22,00	0
Readings supplementary material	10,00	0
Preparation of evaluation activities	22,00	0
Preparing lectures	5,00	0
Preparation of practical classes and problem	5,00	0
Resolution of case studies	20,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

- Theoretical classes of participatory master class.
- Classes of problems related to the subject.



- Classes in the computer room to handle the necessary computer tools for solving problems.
- Practical laboratory classes. They include introductory seminars, carrying out the practices with the follow-up and support of the teacher and carrying out a memory or a written test about them.
- Debate and directed discussion on the work and practices carried out.
- Face-to-face and electronic tutoring with teachers.

EVALUATION

Evaluation system:

- Written exam consisting of exercises similar to those carried out in the classes: assessment of 7 points. To pass the subject, it is necessary to achieve at least 50% of the maximum score of this exam.
- Memory of experience in scientific article format: assessment on 3 points.

Minimum passing grade: 5 points.

REFERENCES

Basic

- ARMITAGE P, BERRY G. Estadística para la investigación biomédica. Ed. Doyma. Tercera ed. (1997) ISBN: 84-8174-158-2
- VIEDMA JA. Métodos estadísticos: fundamentos y aplicaciones. Ed. del Castillo (1972). ISBN 10: 8421900021 ISBN 13: 9788421900024

Additional

- COLTON T. Estadística en medicina. Ed. Salvat. (1990) ISBN: 978-84-345-1476-8
- DOWNIE NM, HEATH RW. Métodos estadísticos aplicados. Ed. del Castillo (1979). ISBN 10: 0063100746 / ISBN 13: 9780063100749
- FERRAN M. SPSS para Windows. Programación y análisis estadístico. McGraw-Hill (2001). ISBN: 978-84-481-301-2.

ADDENDUM COVID-19



This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

ONLY IN THE CASE OF IN-HOUR TEACHING NOT BEING POSSIBLE:

1. Contents

The contents included in the teaching guide are maintained.

2. Volume of work and temporary planning of teaching

The weight of the different activities that add the hours of dedication in ECTS credits marked in the teaching guide is maintained.

Scheduled teaching dates and times are maintained.

3. Teaching methodology

Both theoretical and practical topics and tutorials will take place virtually.

4. Evaluation

The evaluation system of the teaching guide is maintained, but with the realization of the exam online by means of a questionnaire with multiple-choice questions, which will be carried out on the day and time foreseen in the exam schedule approved in the degree.

5. Bibliography

The bibliography recommended in the teaching guide is maintained.