UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: STATISTIC IN HEALTHCARE SCIENCES
Code: 32509
Type: CORE COURSE
ECTS credits: 6
Degree: 399 - PODIATRY DEGREE
Academic year: 2022-23
Center: 16 - FACULTY OF SCIENCES OF THE HEALTH OF TALAVERA
Group(s): 60
Year: 1
Duration: C2
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **IRIANA GALAN ARRIERO** - Group(s): **60**

Building/Office	Department	Phone number	Email	Office hours
Facultad de Ciencias de la Salud Despacho 2.8	CIENCIAS MÉDICAS	926051571	Iriana.Galan@uclm.es	Thursday from 9:00 to 15:00 h Make an appointment by email

2. Pre-Requisites

It has not been established previous requirements

3. Justification in the curriculum, relation to other subjects and to the profession

Statistics is one of the basic training subjects, which provides the necessary tools to start the student in the scientific method applied to the professional activity of podiatry.

Relationship with other subjects: It is important that the student understands the need to use statistical concepts and results to successfully approach and follow other disciplines of the Curriculum. Frequently, the resolution and interpretation of different problems of d

Statistics have a broadly instrumental profile in this degree. As a result of learning you will be able to acquire a series of skills in the use of information and communication technologies, use of the appropriate language orally and in writing that favors communication

4. Degree competences achieved in this course

Course competences

Code	Description
CB01	Prove that they have acquired and understood knowledge in a subject area that derives from general secondary education and is appropriate to a level based on advanced course books, and includes updated and cutting-edge aspects of their field of knowledge.
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
CB05	Have developed the necessary learning abilities to carry on studying autonomously
CE12	Know, critically assess and know how to use biomedical information technologies and sources, to obtain, organize, interpret and communicate scientific and health information. Know the basic concepts of biostatistics and its application. Use the search and retrieval systems of biomedical information and understand and interpret scientific texts critically. Know the principles of the scientific method, biomedical research and clinical trial.
CE58	Use documentation elements, statistics, informatics and general methods of epidemiological analysis.
CT02	Use correct oral and written communication.
GC09	Critically evaluate the terminology, clinical trials and methodology used in research related to Podiatry.

5. Objectives or Learning Outcomes

Course learning outcomes

Description
Determination of the dependence and independence of qualitative and quantitative variables.
Work and communicate effectively with all team members.
Estimation of statistics, parameters and probability.
Identification and resolution in a statistical problem of: variables, data, population, sample, tables and graphs.
Understand the scientific method.
Interpretation of tests to contrast hypothesis .
Knowledge the principles of research in health sciences
Accept responsibility for their own learning and professional development, using assessment as a means of reflecting and improving their performance.
Demonstrate skills in the use of information technologies and communication .
Application of the above concepts in the different proposed studies.

6. Units / Contents

Unit 1: Introduction to statistics. Principles of the scientific method and biomedical research.
Unit 2: Descriptive statistics: types of variables, frequency distribution, graphic representations, summary measures.
Unit 3: Probability. Probability distributions. Random variables.
Unit 4: Statistical inference: types of sampling, point estimation and confidence intervals.
Unit 5: Hypothesis tests. Comparison of proportions and comparison of means between two groups.
Unit 6: Association and independence of qualitative variables. Chi-square statistic.
Unit 7: Relationship between quantitative variables. Correlation and Regression.
Unit 8: Epidemiological studies. Observational and experimental designs.

ADDITIONAL COMMENTS, REMARKS

At the beginning of the course there will be an informative class to present the teaching guide of the subject.

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	CB01 CB02 CB03 CB04 CB05 CE12 CE58 CT02 GC09	1.2	30	Y	N	Evaluation consist in a final test
Workshops or seminars [ON-SITE]	Combination of methods	CB01 CB02 CB03 CB04 CB05 CE12 CE58 CT02 GC09	1.04	26	Y	Y	Portfolio with the activities carried out during the seminars. Recoverable
Final test [ON-SITE]	Assessment tests	CB01 CB02 CB03 CB04 CB05 CE12 CE58 CT02 GC09	0.16	4	Y	Y	Final test has two parts: Test (60%) and exercises (40%). Mark will be calculated as follows: [(Correct Answers-(wrong answers/2))/Number of questions))]x0.6 +(Exercises marks)x0,4. Is neccesary getting a minimum of 4 in each part to pass the exam. Recoverable
Writing of reports or projects [OFF-SITE]	Self-study	CB01 CB02 CB03 CB04 CB05 CE12 CE58 CT02 GC09	0.8	20	Y	N	Portfolio with the activities carried out during the seminars. Recoverable
Study and Exam Preparation [OFF-SITE]	Self-study	CB01 CB02 CB03 CB04 CB05 CE12 CE58 CT02 GC09	2.8	70	Y	N	Assessed by the final test
		Total:	**6**	**150**			
		Total credits of in-class work: 2.4					**Total class time hours: 60**
		Total credits of out of class work: 3.6					**Total hours of out of class work: 90**

As: Assessable training activity
Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Final test	70.00%	70.00%	inal test has two parts: Test (60%) and exercises (40%). Mark will be calculated as follows: [(Correct Answers-(wrong answers/2))/Number of questions))]x0.6 +(Exercises marks)x0,4. Is neccesary getting a minimum of 4 in each part to pass the exam.
Assessment of activities done in the computer labs	30.00%	30.00%	Elaboration of a portfolio with the activities proposed in the workshops
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

The current rating system will be applied; currently, presently UCLM student evaluation regulations, approved on May 23th, 2014.
The global punctuation will be made by making a weighted average of all the evaluable activities. However, the students must achieve a score of 40% in the final test, to add up all the califications. Attendance at seminars and practices is mandatory.

Non-continuous evaluation:

The current rating system will be applied; currently, presently UCLM student evaluation regulations, approved on May 23th, 2014.
Students who opt for this evaluation system will take a final test, a practical exam and a proof with the statistics software where it will be assessed that the student has reached all the competences of the subject.
The calculation of the global mark will be made by making a weighted average of the evaluable activities, however, the students must achieve a score of 40% in each of them.

Specifications for the resit/retake exam:

The same criteria will be followed as in the ordinary convocatory, both continuous and non-continuous evaluation.
The assessment of the assay and of the practices, which have been passed by the student who chooses continuous evaluation, will be kept, up to a maximum of two academic courses from the current course, considering that the practical activities are not modified.

Specifications for the second resit / retake exam:

The same criteria will be applied as in the ordinary convocatory, both continuous and non-continuous evaluation.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	**hours**
Final test [PRESENCIAL][Assessment tests]	4
Writing of reports or projects [AUTÓNOMA][Self-study]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	70

General comments about the planning: The temporal distribution of the different training activities during the course will be adapted to the needs of the students and may vary depending on the degree of achievement by criteria of the teachers. The official academic calendar will be followed.

Unit 1 (de 8): Introduction to statistics. Principles of the scientific method and biomedical research.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Workshops or seminars [PRESENCIAL][Combination of methods]	2
Group 60:	
Initial date: 01-02-2023	**End date:** 10-02-2023

Unit 2 (de 8): Descriptive statistics: types of variables, frequency distribution, graphic representations, summary measures.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	5
Workshops or seminars [PRESENCIAL][Combination of methods]	4
Group 60:	
Initial date: 13-02-2023	**End date:** 25-02-2023

Unit 3 (de 8): Probability. Probability distributions. Random variables.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	6
Workshops or seminars [PRESENCIAL][Combination of methods]	4
Group 60:	
Initial date: 27-02-2023	**End date:** 17-03-2023

Unit 4 (de 8): Statistical inference: types of sampling, point estimation and confidence intervals.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Workshops or seminars [PRESENCIAL][Combination of methods]	4
Group 60:	
Initial date: 20-03-2023	**End date:** 31-03-2023

Unit 5 (de 8): Hypothesis tests. Comparison of proportions and comparison of means between two groups.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Workshops or seminars [PRESENCIAL][Combination of methods]	4
Group 60:	
Initial date: 03-04-2023	**End date:** 14-04-2023

Unit 6 (de 8): Association and independence of qualitative variables. Chi-square statistic.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Workshops or seminars [PRESENCIAL][Combination of methods]	3
Group 60:	
Initial date: 10-04-2023	**End date:** 21-04-2023

Unit 7 (de 8): Relationship between quantitative variables. Correlation and Regression.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Workshops or seminars [PRESENCIAL][Combination of methods]	2
Group 60:	
Initial date: 24-04-2023	**End date:** 28-04-2023

Unit 8 (de 8): Epidemiological studies. Observational and experimental designs.

Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Workshops or seminars [PRESENCIAL][Combination of methods]	3
Group 60:	
Initial date: 01-05-2023	**End date:** 13-05-2023

Global activity

Activities	**hours**
Workshops or seminars [PRESENCIAL][Combination of methods]	26
Final test [PRESENCIAL][Assessment tests]	4
Writing of reports or projects [AUTÓNOMA][Self-study]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	70
Class Attendance (theory) [PRESENCIAL][Lectures]	30
	Total horas: 150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Alvarez Cáceres, R	Estadística aplicada a las ciencias de la salud	Díaz de Santos		9788479788230	2007	
Martínez González MA, Sánchez Villegas A, Faulín Fajardo FJ	Bioestadística Amigable 3ª Ed.	Díaz de Santos		9788490225004	2014	
Martín Andrés A, Luna del Castillo JD,	Bioestadística+ para las ciencias de la Salud	Norma-Capitel		9788484510185	2004	
Erik Cobo, Pilar Muñoz, Sebastià Videla	Bioestadística para no estadísticos.	Elsevier		9788445817827	2007	