Information about the course

Degree: Bachelor of Science Degree in Medicine

Faculty: Faculty of Medicine and Health Sciences

Code: 341102 **Name:** Biostatistics

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

Module: Social Medicine, Communication Skills and Initiation to Research

Subject Matter: Estadística **Type:** Formación Básica

Branch of knowledge: Matemáticas y estadística

Department: Biostatistics, Epidemiology, and Public Health

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

341A	Francisco Javier Arteaga Moreno **(Profesor responsable)**	francisco.arteaga@ucv.es
	Marcelino Perez Bermejo	marcelino.perez@ucv.es
341B	Francisco Javier Arteaga Moreno **(Profesor responsable)**	francisco.arteaga@ucv.es
	Marcelino Perez Bermejo	marcelino.perez@ucv.es
341C	Francisco Javier Arteaga Moreno **(Profesor responsable)**	francisco.arteaga@ucv.es
	Marcelino Perez Bermejo	marcelino.perez@ucv.es

Module organization

Social Medicine, Communication Skills and Initiation to Research

Subject Matter	ECTS	Subject	ECTS	Year/semester
Antropología	6	Medical Anthropology	6	1/1
Estadística	6	Biostatistics	6	1/2
Ética	6	Ethics and Social Morality	6	2/1
Ética y valores profesionales	12	Bioethics and Medical Deontology	6	4/1
		Science, Reason and Faith	6	2/2
Gestión Sanitaria	3	Healthcare Management	3	4/1
Habilidades de comunicación	3	Laboratory of Clinical Interview and Communication Skills	3	3/1
Idioma Moderno	6	Medical English	6	1/1
Iniciación a la investigación	9	History of Medical Science, and Medical Documentation and Terminology	6	2/1
		Laboratory of Research Methodology	3	4/1
Medicina Social	15	Family and Community Medicine	3	5/2
		Legal Medicine and Toxicology	6	5/1
		Preventive Medicine and Public Health	6	4/2

Recommended knowledge

There are no prerequisites, beyond the ability to perform basic mathematical operations and solve algebraic equations.

Learning outcomes

Al finalizar la asignatura, el estudiante deberá demostrar haber adquirido los siguientes resultados de aprendizaje:

R1 - Know the basics of biostatistics and its application to the medical sciences. Be able to design and perform simple statistical studies using computer programs and interpret the results.

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R10 - Knowing how to use and develop a descriptive study of a statistical variable

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R11 - Knowing how to use and apply the linear relationship between two numeric variables

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

---

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

---

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R12 - Knowing how to use and apply probability theory and is able to apply them to solve simple problems

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R13 - Know how to use and apply statistical concepts applied to diagnostic tests (specificity, sensitivity, predictive value, ...)

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R14 - Knowing how to use and apply the basics of random variable and probability distribution, knows the main discrete distributions (Binomial and Poisson) and continuous (Uniform and Normal)

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R15 - Know how to use and apply the basic tools of statistical inference (confidence intervals and hypothesis contrast) using the tables of the Normal, Chi-2, t and F distributions.

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R16 - Knowing how to use and apply confidence intervals and hypothesis contrasts

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R2 - Be able to understand and develop a descriptive study of a statistical variable.

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R3 - Be able to understand, quantify, and express the linear relationship between two numerical variables.

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R4 - Understands the basic principles of probability theory and is able to apply them to solve simple problems.

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R5 - Know and correctly apply the statistical concepts applied to diagnostic tests (relative risk, specificity, sensitivity, ...)

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R6 - Understand and apply the basics of random variable and probability distribution, know the main discrete distributions (Binomial, Poisson and Geometric) and continuous (Uniform, Exponential and Normal)

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R7 - Know and apply the basic tools of statistical inference (confidence intervals and hypothesis contrast) using the tables of the Normal, Chi-2, t, and F distributions.

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R8 - Correctly interpret literature results based on confidence intervals and hypothesis contrasts

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

R9 - Correctly interpret literature results based on confidence intervals and hypothesis contrasts

Learning outcomes of the specified title

Type of AR: Description

- Acquiring basic training for research activity

- Being able to design and perform simple statistical studies using computer programs and interpret the results. Understanding and interpreting statistical data in the medical literature

- Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities

Type of AR: Description

- Knowing the basics of biostatistics and its application to the medical sciences

Type of AR: Description

- Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method

- Having, in professional activity, a critical, creative point of view, with constructive and research-oriented skepticism

- Knowing, critically valuing and knowing how to use the sources of clinical and biomedical information to obtain, organize, interpret and communicate scientific and health information

- Maintaining and using records with patient information for further analysis, preserving data confidentiality

- Obtaining and using epidemiological data and assess trends and risks for health decision-making

- Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience

- Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study

- Students have developed the learning skills needed to undertake further studies with a high degree of autonomy

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics

- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

- Understanding the importance and limitations of scientific thinking in the study, prevention and management of diseases

Assessment system

Modalidad presencial

Assessed learning outcomes	Granted percentage	Assessment tool
	30,00%	Open questions
	70,00%	Tests
	0,00%	Participation in class

Observations

About the Single Evaluation ("*evaluación única*")
No distinction is made between Common Evaluation and Single Evaluation. All students will be assessed in the same manner
Use of AI
The use of AI is recommended for:
- Answering questions about training activities- Assisted learning (alternative explanations or self-assessment exercises)- Searching for alternative resources and references for study
If AI is used in any of the activities, the specific part of the activity must be cited, as well as the AI ??used and its purpose (source consultation, style analysis, knowledge expansion, etc.).
Citation and attribution criteria:- All use of AI tools must be explicitly stated in the submitted document (for example, in a footnote or an appendix).- The name of the tool, the purpose of use (e.g., grammar check, organization of ideas, writing sample), and the part of the work where it was used must be indicated.- Responsible use of AI will be assessed as part of the criteria for originality and academic honesty.

MENTION OF DISTINCTION:
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.

Actividades formativas

The methodologies to be used so that the students reach the expected learning outcomes will be the following:

M1	Masterclass
M2	Problems resolution and practical cases
M4	Content presentations by teacher
M5	Knowledges and skills explanation
M9	Knowledge acquirance through student interaction and activity
M11	Personalised attention by professor
M15	Personal study
M17	Discussion and solving issues in group

IN-CLASS TRAINING ACTIVITIES

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
Theory class	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	Masterclass Problems resolution and practical cases Content presentations by teacher	42,00	1,68
Seminar and group practices	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	Problems resolution and practical cases Knowledges and skills explanation Knowledge acquirance through student interaction and activity Discussion and solving issues in group	10,50	0,42
Practices in small groups	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	Problems resolution and practical cases Knowledges and skills explanation Knowledge acquirance through student interaction and activity Personalised attention by professor Discussion and solving issues in group	4,50	0,18

Tutoring	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	Problems resolution and practical cases Content presentations by teacher Knowledges and skills explanation Knowledge acquirance through student interaction and activity Personalised attention by professor	1,50	0,06
Evaluation	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	Problems resolution and practical cases Personal study	1,50	0,06
TOTAL			**60,00**	**2,40**

TRAINING ACTIVITIES OF AUTONOMOUS WORK

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
No attendance	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	Personal study	90,00	3,60
TOTAL			**90,00**	**3,60**

Description of contents

Descripción de contenidos necesarios para la adquisición de los resultados de aprendizaje.

Theoretical content:

Block of content	Contents
One-Dimensional Descriptive Statistics	Tipos de variables Herramientas de la Estadística Descriptiva: Tablas, Gráficas y Parámetros
Two-Dimensional Descriptive Statistics	Description of the linear relationship between two continuous quantitative variables Simple Linear Regression
Introduction to Probability in Health Sciences	Definition of Probability Simple tools for calculating probabilities: Tables, Venn Diagrams, Decision Trees Conditional Probability and applications of conditional probability in Health Sciences: Diagnostic Tests and Clinical Trials
Random Variable and Probability Distribution Models	Random Variable Discrete Probability Distribution Models: Binomial, Geometric, Poisson Continuous Probability Distribution Models: Uniform, Normal
Introduction to Statistical Inference	Basic Statistical Inference: Estimators, Bias and Variance of Estimators, Mean Square Error Sampling of Normal Populations: Point and Confidential Estimation Hypothesis Testing: contrasts for the mean, the difference in means, the proportion, the difference in proportions, the Chi-2 test for the distribution of a qualitative variable and the Chi-2 test for independence and homogeneity

Temporary organization of learning:

Block of content	Sessions	Hours
One-Dimensional Descriptive Statistics	5	10,00
Two-Dimensional Descriptive Statistics	3	6,00
Introduction to Probability in Health Sciences	6	12,00
Random Variable and Probability Distribution Models	8	16,00
Introduction to Statistical Inference	8	16,00

References

Miguel Ángel Martínez González, Almudena Sánchez Villegas, Estefanía Toledo Atucha, JavierFaulín Navarro. Bioestadística amigable 4ª edición. Elsevier.

Wayne W. Daniel. Bioestadística. Limusa Wiley