Name	STATISTICS
Component Modules	
Subject area	SECS-S/01
Academic year and semester	2nd year, 1st semester
Language of instruction	English
ECTS	8
Number of hours of lectures	48
Teachers	
Expected learning outcomes	At the end of the course, the student will have acquired knowledge and ability to identify the main mathematical, statistical and probabilistic problems. He/she will be able to apply the main statistical and probabilistic methodologies through the analysis tools covered by the program. At the end of the course, the student will have acquired autonomy of judgment in the analysis of the methodologies to be used in solving the questions covered by the course, as well as communication skills expressed with the ability to analyze, synthesize and clearly expose themselves in relation to the quantitative results obtained.
Syllabus	**a)** **Elements of descriptive statistics:** 1) One-dimensional statistical distributions. 2) Position measurements, dispersion measurements, concentration. 3) Elements of bivariate statistics, connection, correlation, regression. **b)** **Elements of probability calculus:** 4) Events, definition of probability. 5) Combinatorial calculus. 6) Set theory. 7) Conditional probability. 8) Total Probability Theorem. 9) Bayes' theorem. 10) Stochastic independence. 11) Random variables. 12) Summary values. 13) Remarkable probability distributions.
Teaching and learning methods	Teaching is mainly delivered through lectures. In addition to lectures, the course also involves a number of hours of interactive teaching (at least one hour for each ECTS). All types of activities are held in person unless there are health restrictions that prohibit their applicability. In this case, the activities will be held online in whole or in part.
Evaluation methods	Written and oral exams. Both tests are to be held at the end of the course. The test will be identical for attending and non-attending students. In the written and oral tests, the assessment will concentrate on the following elements: the correctness of the starting hypotheses, the correct methodology applied, the accuracy of the final result of the question. Attending students (those who have attended at least 75% of the lessons) have the right to opt, as an alternative to the single written test, for two intermediate written tests, the first of which will be held at the end of the first semester and will cover section a) of the program, while the second will be held at the end of the second semester and will cover section b) of the program.
Assessment methods	The written test consists of 6 questions both on applications and methodologies. The correct execution of each question provides 5 points; duration of the test: 2 hours. The oral exam, which can be attended by students who have passed the written test with a minimum grade of 18/30, consists of about 3 questions mainly concerned with methodologies. The correct answer to each

	question provides 10 points. The final grade will be given by the average of the mark of the two tests, expressed in thirtieths, rounded up. In the case of intermediate tests, each intermediate written test (time available: 1 hour) will consist of three questions, each with a weight of 10 points. Only attending students who have passed the first intermediate test with a grade equal to or greater than 18 will be able to access the second intermediate test. The oral exam will be held in the manner indicated above. The final grade will be given by the average of the marks of the three tests, expressed in thirtieths, rounded up (if the first decimal is equal to or greater than 5), or down (if the first decimal is less than 5).
Prerequisites	Mathematics and Financial Mathematics
Teaching materials	Steel, R. G. D., & Torrie, J. H. (1976). *Introduction to statistics*. McGraw-Hill series in probability and statistics (USA). Lecture notes and exercises furnished by the teachers.