Exchange programme Vrije Universiteit Amsterdam

Vrije Universiteit Amsterdam - Exchange programme Vrije Universiteit Amsterdam - 2024-2025

Exchange

Vrije Universiteit Amsterdam offers many English-taught courses in a variety of subjects, ranging from arts & culture and social sciences, neurosciences and computer science, to economics and business administration.

The International Office is responsible for course approval and course registration for exchange students. For details about course registration, requirements, credits, semesters and so on, please visit the exchange programmes webpages.

Business Statistics

Course Code	E_IBA1_BS
Credits	6
Period	P4
Course Level	100
Language Of Tuition	English
Faculty	School of Business and Economics
Course Coordinator	prof. dr. A. Lucas
Examiner	prof. dr. A. Lucas
Teaching Staff	dr. F.D. Bijleveld, dr. G.E. Morejón Cabrera MSc, prof. dr. A. Lucas, X. Zou
Teaching method(s)	Lecture, Written partial exam, Study Group

Course Objective

ACADEMIC AND RESEARCH SKILLS – STUDENTS CAN CONDUCT A BASIC INTERNATIONAL RESEARCH PROJECT FROM START TO FINISH
Academic Skills (three As)
After successfully completing this course, the student can:
• perform key statistical analyses.
Research Skills
After successfully completing this course, the student:
• address real-world problems using a statistical framework.
• use standard software (R/RStudio) for solving statistical problems;
• use R-Markdown and R-Notebooks to create replicable research.

BRIDGING THEORY AND PRACTICE
KNOWLEDGE: Demonstrates theoretical and empirical knowledge concerning the relevant areas in international business administration
After successfully completing this course, the student can:
• select and apply the right statistical technique and conduct a statistical analysis from start to finish (using 1, 2, or more samples, and using categorical or numerical variables), while distinguishing statistical and practical significance;
• work with probabilities, and model events using key probability distributions;
• calculate and interpret descriptive statistics.

APPLICATION: Can propose a solution to an international real-life business problem by applying relevant theories and methodologies.
After successfully completing this course, the student can:
• read and write texts in which statistic analysis plays a key role.

Course Content

International business administration is a subject in which data are crucially important. Is there convincing evidence that your online marketing campaign results in more sales than your standard brochure adds? Or that your increase in employees' schooling budgets increases company loyalty? As a business professional, you want to act on evidence, not only on your gut feeling. Statistics is the key tool that helps you to analyze and make sense of empirical evidence and to support informed, data-driven decision making. These skills are highly valued in todays

labor market.

This course is part of your methodological toolkit and the

methodological learning line of your program. It builds on your aptitude

with symbols as built in Business Mathematics, and your critical

academic evaluation as trained in Academic Skills. The course also leads

up to a further deepening of tools in Business Research Methods, and

applications as dealt with in your courses on Business Processes,

Integrative Project, and the Bachelor Thesis.

More concretely, we cover the following topics:

- descriptive statistics (mean, median, standard deviation, correlation, covariance, etc) and visualising data
- using probabilities and probability rules
- discrete distributions: uniform, binomial, Poisson
- continuous distributions: normal, Student t, chi-squared, F, exponential
- central limit theorem
- confidence intervals for means, variances, proportions
- one sample tests for a mean, a variance, a proportion (t-tests and binomial tests)
- two-sample testing
- ANOVA
- multiple linear regression, dummy variables, R-squared, F-test, t-tests
- chi-squared tests for independence of categorical variables, Goodness-of-Fit tests
- non-parametric tests: sign test, Wilcoxon signed rank test, Wilcoxon rank sum/Mann-Whitney test, Kruskal Wallis test, Friedman test, Spearman correlation test
- using R and R studio
- working with R Markdown and R Notebooks

Additional Information Teaching Methods

Lectures

Tutorials

Computer tutorials

Method of Assessment

Digital exam – individual

Written exam – individual

Participation assignment – individual

Entry Requirements

n/a

Literature

Doane, David P., and Lori E. Seward (2022), Applied Statistics in Business & Economics, 7th Edition, McGraw-Hill.
Also the 6th (and even 5th) edition are okay to use, but beware to double check the section numbering.
Additional documents via Canvas.

Additional Information

You will work with R/RStudio/R Markdown. These programs are available on VU computers, but can also be downloaded for free. Instructions are given in the computer classes.

Recommended background knowledge

Business Mathematics