Sveučilište u Zagrebu Agronomski fakultet
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Business Statistics I (152079)

Nositelj kolegija

doc. dr. sc. Petra Posedel Šimović

Opis kolegija

This module presents the basics of descriptive and inferential statistics in the context of agricultural economics. The part concerned with descriptive statistics pays special attention to organization, presentation, and interpretation of different types of data. The intention here is to develop an ability to critically assess and interpret statistical data and to avoid common pitfalls. A short review of basic concepts of probability is a bridge to the part devoted to the inferential statistics. This part starts by an introduction to discrete and continuous random variables and the most important distributions, followed by the classical topics of estimations and hypotheses testing about the mean and proportion.

ECTS: **6.00**

Engleski jezik: **R1**

E-učenje: **R1**

Sati nastave: 60
Predavanja: 44
Auditorne vježbe: 12
Seminar: 4

Izvođač predavanja

- doc. dr. sc. Petra Posedel Šimović

Izvođač vježbi

- doc. dr. sc. Petra Posedel Šimović

Ocjenjivanje

Dovoljan (2): 60-69%
Dobar (3): 70-79 %
Vrlo dobar (4): 80-89 %
Izvrstan (5): 90 -100%

Vrsta kolegija

- Undergraduate studies / BS Courses taught in English (Izborni kolegij, 1. semestar, 1. godina)

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Opće kompetencije

- raising the level of statistical literacy
- acquiring knowledge and skills necessary to understand, analyze and solve problems arising in the course of practical work
- developing an ability to critically assess and interpret statistical data and to avoid common pitfalls
- using statistical software with confidence

Oblici nastave

- Lectures
  individual work on concrete problems in order to acquire the level of statistical literacy necessary for understand, analyze and solve practical problems arising in the course of work in agricultural economics.
- Assessments
- Consultations
- Practicum
  on computers
- Seminars
  solving an individual problem

Ishodi učenja i način provjere

Ishod učenja	Način provjere
organize data and present them grafically	individual and practical work, project
calculate numerical descriptive measures of data	homework, exam, practical work
apply Excel tools for descriptive statistics	exam, practical work, project
distinguish between discrete and continuous random variables and their probability distributions	homework, practical work, project
determinate probabilities and use statistical tables	homework, practical work, project, exam
construct confidence intervals for means and proportions	homework, practical work, project
set up a hypothesis and test it	homework, practical work, project, exam
be able to use mathematical software and interpret obtained results	project work

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Način rada

Obveze nastavnika

1. Course planning
2. Selection and creation of teaching materials
3. Evaluation of course, teaching materials and curriculum
4. Construct tests
5. Grade students on the basis of their achievement

Obveze studenta

1. Attend lectures regularly
2. Do homeworks and participate actively during lectures
3. Write tests and win at least 25% of points on each test to get the signature
4. Do individual projects

Polaganje ispita

Elementi praćenja	Maksimalno bodova ili udio u ocjeni	Bodovna skala ocjena	Ocjena	Broj sati izravne nastave	Ukupni broj sati rada prosječnog studenta	ECTS bodovi
1st exam	40 %	60-69 % 70-79 % 80-89 % 90-100 %	Dovoljan (2) Dobar (3) Vrlo dobar (4) Izvrstan (5)	30	90	2
2nd exam	30 %	60-69 % 70-79 % 80-89 % 90-100 %	Dovoljan (2) Dobar (3) Vrlo dobar (4) Izvrstan (5)	15	45	2
3rd exam	30 %	60-69 % 70-79 % 80-89 % 90-100 %	Dovoljan (2) Dobar (3) Vrlo dobar (4) Izvrstan (5)	15	45	2
Total	100 %			60	180	6

Elementi praćenja	Opis	Rok	Nadoknada
3rd exam	interval estimations and hypothesis testing	16.th week	

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Tjedni plan nastave

1. The purpose of statistics. Descriptive and inferential statistics. Basic concepts. Types of variables. Scales of measurement.
2. Organizing and graphing of qualitative and quantitative data. Interpretation of different types of diagrams. Recognizing and avoiding common pitfalls.
3. Measures of central tendency – mean, median and mode. Measures of dispersion. Measures of position.
4. Index theory Measures of association Basic definitions and examples from the economic theory Types of measures of association
5. Elements of probability I Experiment, outcomes and sample space. Three conceptual approaches to probability. Examples.
6. Elements of probability II Dependent versus dependent events. Conditional probability. Bayes' theorem.
7. Discrete random variables and their probability distributions I Probability distribution of a discrete random variable. Mean and standard deviation. The binomial probability distribution.
8. Discrete random variables and their probability distributions II The Poisson probability distribution. The hypergeometric probability distribution.
9. Continuous random variables and their probability distributions I Continuous probability distribution. The normal distibution. The standard normal distribution. Applications.
10. Continuous random variables and their probability distributions II The normal approximation to the binomial distribution.
11. Populations and samples Random and nonrandom samples. Selecting a simple random sample. Sampling errors.
12. Estimation of the mean Point and interval estimates. Interval estimation of a population mean for large and small samples. The t probability distribution
13. Estimation of the proportion Interval estimates of a population proportion. Sample size determination.
14. Hypothesis tests about the mean Hypothesis tests. Rejection and non-rejection regions. Two types of errors. Hypothesis tests about a population mean for large and small samples.
15. Hypothesis tests about the proportion Hypothesis tests about a population proportion.

Obvezna literatura

1. P.S. Mann, Statistics for Business and Economics, J. Wiley, N. Y., 2005.
2. M. Silver: Business Statistics, Mc. Graw Hill, London, 1997.

Preporučena literatura

1. L. Kazmier, Schaum's Easy Outline of Business Statistics, McGraw-Hill, N. Y., 2003.
2. D. Huff, How to lie with statistics, WW Norton, N. Y., 1993.

Sličan kolegij na srodnim sveučilištima

- Matematik und Statistik, BOKU
- Statistik, University of Hohenheim

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