Sveučilište u Zagrebu Agronomski fakultet
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Statistics (146038)

Nositelj kolegija

doc. dr. sc. Petra Posedel Šimović

Opis kolegija

The course includes the elements of statistical inference and metodologies for data analysis: comparing two and more populations, analysis of variance, simple and multiple regresion, time series analysis and factor analysis to the data gained from the environmental studies.

ECTS: **3.00**

Sati nastave: 30
Predavanja: 20
Vježbe u praktikumu: 10

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

- Graduate studies / Environment, agriculture and resource management (Obvezni kolegij, 2. semestar, 1. godina)

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 in environmental studies
- developing the ability to critically assess and interpret statistical data and to avoid common pitfalls
- using statistical software with confidence

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Oblici nastave

- Lectures
  mastering statistical methods through concrete problems from environmental studies
- Auditory Exercises
- Other forms of group or individual learning
- Practicum
  on computers using relevant software packages

Ishodi učenja i način provjere

Ishod učenja	Način provjere
ability to compare two or more populations, construct confidence intervals and test hypothesis concerning them	Homework, practical work, exam
do analysis of variance using ANOVA test	project
do modeling with simple and multiple regression including using the obtained models for prediction	homework, individual work
get familiar with time series models, determination of linear trend in time series analysis and seasonal and cyclical effects, using models for prediction	homework, project task, exam
understanding the basic principles of factor analysis	homework, exam

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

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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	50 %			14	20	1
2nr exam	25 %			8	20	1
3rd exam	25 %			8	20	1
activity	>10 %					
Total	100 %			30	60	3

Tjedni plan nastave

1. Short repetition L - normal distribution, interval estimations, testing hypothesis.
2. Comparing two populations L - types of samples, interval estimations and hypothesis testing about the difference between two population means
3. Comparing two populations L -interval estimations and hypothesis testing about the difference between two population proportions.
4. Comparing two populations E - excercises on comparing two populations.
5. Analysis of variance L - analysis of variance: F-distribution, ANOVA test, conditions on applicability.
6. Analysis of variance E - the use of ANOVA test.
7. Linear regression L - simple linear regression, least squre line, linear correlation.
8. Linear regression L+E - multiple regression.
9. Linear regression E - excercises on regression.
10. Time series analysis L - components, models.
11. Time series analysis L - determination of linear trend, seasonal and cyclical effects.
12. Time series analysis E - exercises on concrete dana.
13. Factor analysis L - Method of common factors, standardizing variables.
14. Factor analysis L - correlation matrix, identifying factors, common and individual factors.
15. Factor analysis E - excercises on factor analysis.

Obvezna literatura

1. M. Dekking, C. Kraaikamp, H. P. Lopuhaa, L. E. Meester: Modern introduction to probability and statistics: understanding why and how, Springer Verlag, London, 2005.
2. Richard A. Johnson, Dean W. Wichern: Applied Multivariate Statistical Analysis(6th Edition), Pearson Prentice Hall, 2007.
3. G. van Belle: Statistical Rules of Thumb, Willey-Interscience, 2002.
4. P.S. Mann: Statistics for Business and Economics, J. Wiley, N. Y., 1995.

Preporučena literatura

1. P. Kline: An Easy Guide to Factor Analysis, Routledge, London and New York, 2008.
2. D. R. Nielsen, O. Wendroth: Spatial and Temporal Statistics, Catena Verlag, 2003.

Sličan kolegij na srodnim sveučilištima

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

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