



UNIVERSITY OF NEW YORK IN PRAGUE

Course: MTH301 Statistics II (6 ECTS/3 US credits)

Semester: Spring 2024

Prerequisites: Statistics I

Instructor:

Contact:

Office hours:

1. Catalogue Description

The course consists of a survey of statistical methods and tools applied to decision-making procedures in economics, business, and social sciences. The emphasis of the course is on the principles of statistical inference, regression analysis and time series analysis.

2. Course Purpose

The purpose of the course is to provide students with the knowledge and skills in order to assess statistical evidence and inference, based on multivariate statistical analyses reported in scientific papers. Furthermore, the course aims to teach the steps on the computation of multivariate statistical procedures needed to answer research questions.

3. Required Readings

Text: Business Statistics

Groebner, D. F., Shannon, P. W., Fry, P. C., Smith, K. D.
Pearson
Year: 2017 (Edition 10)

Text: Statistics for psychology

Aron, A., Aron, E.
Prentice Hall.
Year: 1996 (Edition 2)

4. Additional Readings

Text: Statistical Thinking for Managers

Hildebrand, D. K., Ott, R. L. Duxbury
Press
Year: 1998 (Edition 4)

Text: Managerial Statistics

Keller, G.
SOUTH-WESTERN CENGAGE Learning
Year: 2012 (Edition 9)

Text: Introduction to Time Series and Forecasting

Brockwell, P. G., Davis, R. A.
Springer Texts in Statistics
Year: 2002

Text: Business Statistics – A First Course Levine,
D. M., Krehbiel, T. C., Berenson, M. L. Pearson
International Edition
Year: 2013 (Edition 6)

Text: Business Statistics in Practice
Bowerman, B. L., O'Connell, R. T., Murphree, E. S.
McGraw-Hill New York
Year: 2011 (Edition 6)

Text: Statistical Theory and Inference
Olive, D.
Springer International Publishing.
Year: 2014 (Edition 12)

Text: Handbook of Computational Statistics
Gentle, J. E., Hardle, W. K., Mori, Y.
Springer-Verlag Berlin Heidelberg.
Year: 2012 (Edition 2)

Text: Statistics for Managers using Microsoft Excel
Levine, D. M., Stephan, D., Krehbiel, T. C.
Upper Saddle River, NJ: Prentice Hall
Year: 2007 (Edition 5)

Text: Intro Stats
De Veaux, R.D., Velleman, P. F., Bock, D.E. Pearson
International Edition, Addison Wesley.
Year: 2009 (Edition 3)

5. Learning Outcomes

Upon the completion of this course, the students should be able to:

- Understand the theoretical concepts of estimating population parameters.
- Understand the theoretical concepts of hypothesis testing.
- Compare two samples using proper statistical methods.
- Understand the basic principles of correlation and regression theory.
- Apply linear and nonlinear regression analysis with one independent variable.
- Apply linear regression analysis with more than one independent variable.
- Understand and apply various methods of time series analysis.
- Interpret computer outputs and routinely use computers in statistical analyses.

6. Course Content

- Estimating population parameters.
- Introduction to hypothesis testing.
- Hypothesis testing and estimation for two population parameters.
- Introduction to correlation and linear regression analysis.
- Multiple regression analysis and model building.

- Analyzing and forecasting time-series data.

7. Course Requirements and Grading

Active participation	10%
Homework assignments	16%
Quizzes	9%
Project	15%
Mid-term exam	20%
Final exam	30%
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Total	100%

Active participation (10%)

Students are expected to regularly participate during class meetings by answering questions or solving examples. This will be counted towards participation from each class.

If you miss more than 12 (twelve) hours of class, for any reason, you will automatically fail the entire course – see Key UNYP Policies.

Homework assignments (16%)

There will be four assignments during the semester. You will be asked to analyze large amounts of data; the use of a computer (Microsoft Excel and Gretl) will be necessary.

Quizzes (9%)

There will be four (pre-announced) quizzes. Two quizzes before the mid-term exam and two after the mid-term exam. Each quiz is worth 3 points (= 3% of your final credit). The worst quiz does not count. **A quiz that was administered during a missed class cannot be made up. There will be no exceptions.**

Project (15%)

Students will be assigned a project. The topic of the project will be defined by the teacher or may be based on student's thesis, which must be approved in advance.

Mid-term exam (20%)

The mid-term exam will consist of several problems covering the material discussed in the lectures during first six weeks. Knowledge of Microsoft Excel will be expected.

Study material: class notes, readings, and assignments.

Final Exam (30%)

The final exam will cover the material introduced after the midterm test.

Study material: class notes, readings, and assignments.

Grading Scale

Letter Grade	Percent (%)	Generally Accepted Meaning
A	95-100	Outstanding work
A-	90-94	
B+	87-89	Good work, distinctly above the average
B	83-86	
B-	80-82	
C+	77-79	Acceptable Work
C	73-76	
C-	70-72	
D+	67-69	Work that is significantly below average
D	63-66	
D-	60-62	
F	0-59	Work that does not meet the minimum standards for passing the course

8. Key UNYP Policies

Attendance

It is your responsibility to show up to class on time. If you are late you will be marked as absent for that hour. **If you miss more than 12 (twelve) hours of class, for any reason, you will automatically fail the entire course. Pay strict attention to this. The class policy is standard UNYP policy.**

Academic Honesty

- The University's rules on academic dishonesty (e.g. cheating, plagiarism, submitting false information) will be strictly enforced. Please familiarize yourself with the STUDENT HONOUR CODE or ask your instructor for clarification.
- For examinations: copying from your neighbor, speaking to another student, using a phone or anything similar will result in you failing the test or quiz. On written papers properly note your sources with academic citations. Cutting and pasting from the internet may be considered plagiarism. If you have questions about this, please consult the instructor.

9. General Requirements

- Students are expected to attend each class session and participate in a positive way.
- Students are expected to turn in homework assignments at the beginning of the class period on the day they are due.
- Students are expected to leave their mobile phones, beepers, pagers, etc. switched off.
- Students may not use laptops or netbooks for any reason other than taking notes.
- In the event of illness or emergency, contact your instructor IN ADVANCE to determine whether special arrangements are possible.
- The instructor will approve a make-up test without penalty only in case of serious illness or injury (a report from hospital is needed). In other cases (visiting doctor's, traveling to the home country, visa problems, sport or other activities, etc.) the instructor may or may not approve a make-up – in any such case the student's score in

the test will be reduced.

10. European Credit Transfer and Accumulation System (ECTS)

The students that complete the course will receive 6 ECTS credits or 3 American credits. One ECTS credit corresponds to 25-30 hours of work. For comparison, 1 American credit hour equals approximately 2 ECTS credits.

For this course, students are expected to spend time in the following course-related activities:

Class Lectures and exams	45 hours
Reading class related material	45 hours
Mid-term test and quiz preparations	30 hours
Homework assignments – team work	25 hours
<u>Final exam preparation</u>	<u>25hours</u>
TOTAL	170 hours

11. Technology Expectations

Regular use of computers is required. You should be familiar with Microsoft Excel.