



Syllabus

Term: 2020/21/1 **Subject name:** Applied Mathematics 2. **Subject code:** IVB008ANMI

Unit (Unit code) (MIK-IV)

Lecturer responsible for the course: Dr. KLINCSIK Mihály

Requirement: Exam

Classes per week : 2/0/0/2

Classes per term: 10/0/0/10

Purpose of education:

The course gives an introduction to important mathematical techniques of exercise solving and the basic theory of probability and statistics with and without Maple computer algebra software. Equal emphasis is given to learning new mathematics and to learning how to construct and write down correct mathematical arguments.

Contents:

Modeling and analysis of engineering problems under uncertainty. Engineering applications of probability and statistical concepts and methods.

1. Understand the concepts of probability and statistics.
2. Acquire basic knowledge of fundamental probability distributions, discrete and continuous, uni-variate and multi-variate.
3. Estimate and interpret correlation coefficient.
4. Carry out point and interval estimations involving normal populations.
5. Understand hypothesis testing and the meaning of the null hypothesis.
6. Understand regression analysis and data fitting by using least square method

The Students must solve two intermediate (or midterm) tests successfully and take final exam. The language of the exam is English.

System of examing and valuation:

Evaluation + Grading

Evaluation + Grading without exam	Evaluation + Grading with exam
1. Midterm test with weighting factor 40%	1. Midterm test with weighting factor 30%
2. Midterm test with weighting factor 40%	2. Midterm test with weighting factor 30%
3. Homework with weighting factor 20%	3. Exam with weighting factor 40%



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System of examing and valuation:

1. Satisfactory work: Achieving more than 40% of the total points from 2 midterm written tests and homework exercises. Lecturer suggest for all students a final mark based on grading scale table. If it is acceptable by the student then it is recording into the Neptun system.
2. Unsatisfactory work: When the total points of the written midterm tests are less than 40% then a new test need to write from the whole topics of the semester at the first two weeks in the exam period. A minimum of 40% is required to pass on this test.
3. If any one of students want to get a better mark then take examination in exam period. This may allow repeating three times during the semester.

Grading Scale table:

Numeric Grade:	excellent (5)	good (4)	satisfactory (3)	pass (2)	fail (1)
Evaluation in percentages:	[85%,100%]	[70%,85%)	[55%,70%)	[40%,55%)	[0%,40%)

Bibliography:

Readings and Reference Materials:

Sheldon M. Ross, *Introduction to probability and statistics for engineers and scientists*, 3rd Edition, Elsevier Academic Press, 2004.

Anthony Hayter, *Probability and Statistics for Engineers and Scientists*, Fourth Edition, 2012. Brooks/Cole, Cengage Learning

Leon-Garcia, Alberto, *Probability, statistics, and random processes for electrical engineering* (3. ed.), Pearson Education, Inc, 2008. (ISBN 0-13-147122-8)

Materials are found on platform of Neptun <https://neptun.pte.hu/> login as student.