Mathematics I

This course is intended for foreign students studying at our faculty and domestic students who registered it.

Content of the course:

Introduction to linear algebra - vectors, vector spaces, matrices, determinants, systems of linear equations. Analytic geometry in E_3 - straight lines and planes. Calculus of functions of single variable - limit, continuity, derivative, extrema, behaviour of a function, indefinite integral, methods of integration, definite integral.

- Plan of lectures in academic year 2024/25

Lecturers

doc. Mgr. Ing. Tomáš Bodnár, Ph.D., Office: KN:D-303

- lectures: Tuesday, 10:45 - 12:15 and Thursday, 10:45 - 12:15.

Mgr. Hynek Řezníček, Office: KN:D-205b

- tutorials: Wednesday, 9:00 - 10:30 and Friday 10:45 - 12:15.

In the case of any problem (especially with assessments from tutorials, or with exams) contact your teacher.

Tutorials, assessments

Tutorials are obligatory. Assessment from tutorials (written in the study record) confirms *student's presence and activity* at the tutorials and elaboration of homework and tests. Assessment is a necessary condition for the exam. (i.e. student can make the exam only with the assessment written in the study record.) The assessments are written in the last semestral week, not later than one week after. Exceptions are possible only with the explicit agreement of the chair of the institute.

- Preliminary plan of tutorials in academic year 2024/25
- Tutorial exercises and other information

Exams

There are several necessary conditions to be fulfilled by students in order to be admitted to the exam:

- Student must have a *valid assessment* from tutorials registered in the electronic system KOS. (students without valid assessment can't subscribe for the exam)
- Student has to *subscribe (register) in the KOS* system for the chosen date and level of the

exam. (students who will be not subscribed for the exam in the KOS system can't participate in the exam)
- Student should come to the exam *in time*, i.e. he/she should be present in the examination room at least 10 minutes before the official start of the exam. (students who will come late, will be not allowed to participate in the exam)
- Student has to bring his/her *Student Identification Card*. (students will be not allowed to participate in the exam without presenting this card)

These conditions will be followed strictly, without any exceptions.

The updated detailed information will be made available at the end of semester in the *Notice of exams* from Mathematics I for the academic year 2024/25.

Sample exam tests:

Exam 1

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Exam 2

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Exam 3

Literature:

- Neustupa, J.: Mathematics I, CTU Publishing House, Prague, 1996
- Neustupa, J.: Mathematics I, updated electronic version Part I, Part II
- Neustupa, J. and Kračmar, S.: Problems in Mathematics I, CTU Publishing House, Prague, 1999
- Selected problems from the textbook Problems in Mathematics I
- Selected problems from the exam tests in previous years
- Recommended Czech materials Základní literatura:
- Keisler, H. J.: Elementary Calculus: An Infinitesimal Approach, 2nd edition, Prindle, Weber & Schmidt, 1986.
- Calculus Volume I., Volume II., Volume III., provided by https://cnx.org/.
- College algebra, provided by https://cnx.org/

Timetable:

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