

**Course requirements**  
**Mathematics A1a - Calculus**  
2010/11/1

**Neptun id. :** BMETE90AX00

**Maximum allowed absence rate:** 30%

**Lecturer:** Dr. Anikó Csákány

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**Faculty Signature:**

Midterm tests will be given:

Test	Week	Passing limit	Topics	Legal tools
# 0	2	50%	High school material	--
# 1	6	30%	Part 1 (see below)	Pocket calculator, formula sheet
# 2	12	30%	Part 2 (see below)	Pocket calculator, Formula sheet

In each midterm test students can use a pocket calculator and in tests # 1 and # 2 a formula sheet handed out by the Department.

**To get the faculty signature each of the three midterm tests should be successful.**

*Those who fail in all the three tests at the first attempt will not get the faculty signature.*

Repeated Tests: two of the 3 tests can be retaken during the 13<sup>th</sup> week. Anyone can retake tests, not only the ones who failed. The last result counts. Students can increase and also decrease their former score in the repeated tests!

Signature Test: as a last chance to get the faculty signature there will be a Signature Test during the make up week: one unsuccessful test can be retaken here. (Extra fee will be charged for retaking a test during the make-up week.)

Midterm score: sum of points on midterm test #1 and test #2 (min. 12, max 40)

By the open book short quizzes and take-home quizzes students – only who meet the above requirements of faculty signature - may increase their total score by 10 more points.

Students already having the faculty signature:

- may retake the tests, in this case their midterm score equals to the sum of their test scores in test #1 and #2;
- may not retake the tests, in this case their midterm result is 30% (12 points).

**Grading system:** at the end of the semester there will be a written final exam (100 minutes) for 60 points. To be successful students are expected to reach at least 40% (24 points) on the final exam.

Total score = midterm score (min. 12, max 40 points) + points of final exam (min 24, max 60) + points of quizzes (min 0, max 10)

The final grade for the subject based on the „total score” will be calculated according to the following chart:

- 39	failed
40 - 54	passed
55 - 69	satisfactory
70 - 84	good
85 – 110	excellent

### Topics:

Part 1: Complex numbers. Vectors, lines and planes in 3-space. Numerical sequences. Limits of functions, continuity. Differentiation, rules of derivation. Tangent line. Mean value theorem.

Part 2: L'Hospital Rule. Extremal values, graphing functions. Optimization. Taylor's Theorem.. Indefinite integral. Techniques of integration: integration by parts, substitution. Definite integral, Newton-Leibniz formula. Applications of integrations: area of regions.

Part 3: Applications of integrations: arc length of curves, volume and surface area of solids of rotation, centroid of regions. Improper integral.

Textbook: Thomas: Calculus, 11th edition, (International Edition), Addison Wesley

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Dr. Anikó Csákány