



COURSE: Calculus I (first module of Calculus)

ACADEMIC YEAR: 2019/20

TYPE OF EDUCATIONAL ACTIVITY: Basic

TEACHER: Alberto Cialdea

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phone: : 0971-205880

mobile (optional):

Language: Italian

ECTS: 6

(5 for lessons + 1 for
tutorials/practice)

n. of hours: 52

(40 hours for lessons +
12 hours for
tutorials/practice)

Campus: Potenza/

Dept.: DIMIE

Program: Scienze e Tecnologie
Informatiche

Semester: I

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The teaching of Calculus I is the first module of Calculus. It is a basic teaching.

The contents of the course are:

- numerical sets
- sequence of real numbers
- real functions of one real variable
- limits and continuity of functions of one real variable
- differential calculus for real functions of a real variable.
- Local extrema, monotony, study of functions.

The students should master the concepts of limit, continuity and differentiability for functions of a real variable, with particular reference to the study of functions. He will be able to apply this knowledge to the solution of simple practical problems, posed by the pure and applied sciences.

PRE-REQUIREMENTS

Basic algebraic calculus.

SYLLABUS

Real numbers and generalities about functions (14 hours).

Sequences of real numbers (8 hours).

Limits and continuity of functions of one real variable (12 hours)

Fundamentals of differential calculus (8 hours).

Applications of differential calculus like determination of maximum and minima, drawing function graphs, etc. (10 hours).

TEACHING METHODS

Theoretical lessons and exercises.

EVALUATION METHODS

Achievements will be assessed by the means of a final exam. This is based on an analytical assessment of the "expected learning outcomes" described in both modules of Calculus.

The examination is composed of a written session. The students that obtained at least 16/30 are admitted to the oral exam. The exam is passed if the final assessment (arithmetic average of the marks of the written and oral exam) is at least 18/30.

There will be also three intermediate tests throughout the year. The exam is passed as well if the average of the marks in these tests is at least 18/30. Each intermediate test can be repeated one time. For the students aiming at improving their score, an oral session is possible, but not obligatory.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Bertsch, Dal Passo, Giacomelli, Analisi Matematica, McGraw-Hill.

P. Marcellini, C. Sbordone, Esercitazioni di Matematica, Liguori Editore.

Additional notes are available at <http://informatica.unibas.it/moodle> .

INTERACTION WITH STUDENTS

Educational goals, syllabus and evaluation methods are described at the beginning of the course.

Office hours:

Wednesday 15:00-17:00, Thursday 12:30-13:30

In addition students can contact the teacher by email.

News of every kind are available on the FORUM session of the course web site.

EXAMINATION SESSIONS (FORECAST)¹

12/02/2020, 06/05/2020, 01/07/2020, 15/07/2020, 16/09/2020, 15/12/2020.

SEMINARS BY EXTERNAL EXPERTS YES NO

FURTHER INFORMATION

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.