



ACADEMIC YEAR: 2019/20

COURSE: Elements of Higher Analysis, Mod. A

TYPE OF EDUCATIONAL ACTIVITY: Characterizing

TEACHER: Alberto Cialdea

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Language: Italian

ECTS: 6

n. of hours: 48

Campus: Potenza

Semester: First

Dept.: DIMIE

Program: Mathematics

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The contents of the course are:

- measure theory and Lebesgue integration;
- abstract measures and integration theory;
- functions of bounded variation of one real variable and absolutely continuous functions.

By studying the arguments of this Course the students will learn fundamental concepts and techniques of modern Mathematical Analysis. The students will sharpen their ability of abstraction and methodological skills.

PRE-REQUIREMENTS

The prerequisites of this course are the acquaintance with elementary topics in analysis which are usually given in the Courses of Mathematical Analysis 1, Mathematical Analysis 2 and Complements of Analysis (i.e. limits, series, differentiable functions, and Riemann integration).

Syllabus

Measure theory and Lebesgue integration (14 hours).

Abstract measures and integration theory (24 hours).

functions of bounded variation of one real variable and absolutely continuous functions (10 hours).

TEACHING METHODS

Traditional theoretical lectures.

EVALUATION METHODS

Final oral examination after the end of modulus B. Alternatively the student can take three partial examinations.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

H. L. Royden, Real Analysis, Mc Millian.

Additional notes are available at <http://cialdea.altervista.org/disp.html>.

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.

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 SI NO

FURTHER INFORMATION

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