A few words to foreign students

If you have recently arrived in Italy from another country and do not know Italian language very well, you are encouraged to contact personally the teacher to discuss your problems (in English, if you prefer). However, here are some basic suggestions. If you find them obvious, this is good! My experience says that at least for someone these facts are not so obvious. In general, if you want to succeed in your studies, you have to accept the idea that you must make a great effort, probably greater than that your Italian mates will make. In particular:

You must improve as soon as possible your understanding of spoken and written Italian, as well as your ability in speaking and writing in Italian; also for this reason (but not only for this) stay as long as possible in the University, attending to lessons and studying among your Italian mates.

Plan your vacations and / or your flights back to your country in advance, according to the scheduled lessons and exams in the University: do not miss parts of the courses (or some exams) “because you were at home”.

Do not ask for textbooks written in English, but learn Italian language, also in the technical, engineering field you want to study.

Pay attention to all the “rules” of University: do not miss an exam just because you did not sign in before a fixed date, for instance.

Realize if you need some preliminary training on some subjects (particularly in “elementary mathematics”); if this is the case, work hard also in this field, and make this job immediately.

Ask all your questions, and ask them to the right person (or office).

Decide to attack today any problem you have: postponing problem solving will make your problems harder.

Here below you will find an English version of the Notices for the course.

Notices for the Course “Analisi Matematica 1”
Ingegneria Elettronica. 2015/2016. Prof. M. Bramanti

Web page. The following web page:
http://www1.mate.polimi.it/~bramanti/corsi/avvisi_an1_2016.htm
(also reachable from www.mate.polimi.it) is the place where you will find normally any information on the course: up-to-date notices, teaching material (downloadable pdf files). In case of doubt, trust this web page instead of any other webpage in www.polimi.it.

Concise program of the course. Real and complex numbers. Real functions of one real variable: limits, continuity, differential calculus with applications, integral calculus; sequences and series. It is available in the web (see above) a detailed (but not definitive) version of the program.

Adopted workbook: M. Bramanti: Esercitazioni di Analisi 1. Ed. Progetto Leonardo, Bologna, 2011. This book contains a lot of examples, remarks and exercises, carried out in detail. These exercises are taken from the written exams of the last years, so they constitute a good training for the written part of the exam.


Background. A “prerequisite” is an argument which:

1) it is necessary to know, in order to understand the course; 2) is not taught in the course; 3) is required in the exam.

The course of “Analisi Matematica 1” has a lot of prerequisites: actually, one can say that all the elementary mathematics which a student has studied at school is useful here, and this is one of reasons why this course is often found difficult by the students.

Briefly, a minimal syllabus is the following:

Algebra: algebraic calculus; polynomials and their operations; n-th root of a number; powers with fractional exponents and their properties absolute value and its property; solution of algebraic equations and inequalities (first and second degree equations -and inequalities-, equations with absolute values, fractional equations, irrational equations...).

Logarithms and their properties; equations and inequalities involving logarithms and exponentials.

Trigonometry: basic concepts, elementary trigonometric functions, basic trigonometric identities, geometric applications of trigonometry, trigonometric equations and inequalities.

Analytical geometry: Cartesian coordinates in the plane, equation of the straight line, of the circumference, rudiments about the conics; geometrical meaning of equations and systems of equations in two variables.

Elementary functions: to know the graphics of straight lines, parabolas, power functions, exponentials, logarithms, elementary trigonometric functions.

Besides this, the study of university mathematics requires a precise language, a critical understanding of definitions, proofs, and so on, in a higher degree than that usually developed in high schools.

For these reasons, all the students (even those who got a good score in the test) are advised to make an extra-effort, in the first weeks of the courses, to review and consolidate their mathematical background.

The references for background mathematics are the above quoted books:

M. Bramanti: PreCalculus. Capp. 1-9, 12, 13 (with the exception of the paragraphs marked with a *).


Timetable of this course (lessons+recitations):

- Monday, h. 13.15-16.15, lesson, room F.0.1.
- Tuesday, h. 10.15-13.15, lesson, room N.0.2.
- Friday, h. 15.15-18.15, recitations, room L.26.11
Any suppression of lessons will be communicated by the teacher. Recitations are held by Prof. Alberto Bosisio.

**Office hours of the teacher.** Will be communicated during the course. My office is located at “Dipartimento di Matematica” (building “La Nave”, via Bonardi 9), 4th floor, phone 4567. You can also contact me at the lessons. In the weeks when there is no lesson, usually office hours are suppressed.

**Examination rules.** The exam consists in a written part (exercises) and an oral part (questions about definitions, examples, statements and proofs of theorems). Exams are held on February, July and September. Students with “OFA MAT” (=bad score in the math part of the test) cannot take the exam. To take the exam is necessary to sign in at “Poliself”, within the deadline. Who passes the written part of the exam is admitted to the oral part. During the course two “prove in itinere” (intermediate tests) will be held: who passes both, passes the written part of the exam, and is admitted to the oral part. Other details about examination rules are explained in the web page.

Any variation to the above notices, and any further communication will be published on the web page of this course.

Final important notice for foreign students. These notices have been written in English to help foreign students who could have difficulties with Italian language to understand precisely and from the very beginning of the course some important facts about this course. The teacher is also available to answer your questions in English, in his office hours. However, remember that:

- *this course is held in Italian;*
- *all the teaching material is in Italian;*
- *you will be required to take the exam in Italian.*

Therefore, you must learn quickly both spoken and written Italian.