Linear Algebra and Geometry

Instructor:
Giuseppe Pareschi, Professor

Course Format:
4 Hours Lecture, 2 Hours Exercise, 2 hours with the TA

Period:
Summer Semester

Language:
English

Recommended Previous Knowledge:
Calculus I

Contents:
In the lectures and in the exercises the student will be introduced into the main principles of Linear Algebra, Euclidean Geometry and their interplay. They include vector algebra, matrices and determinants, linear transformations, differentiable curves, inner product spaces, eigenvalues and eigenvectors, spectral theorem for symmetric and hermitian operators.
Each topic is illustrated by examples and exercises. Additionally the student receives additional example problems for home-studies.

Learning Outcomes:
A working knowledge of the basic elements of Linear Algebra and Euclidean Geometry.
Getting the ability to apply the basic linear algebra techniques both to linear algebra problems and to geometric problems.
Getting the competence to apply the principles of Linear Algebra and Geometry to problems in the various branches of Engineering Sciences.

Textbook:
T. Apostol, Calculus, Vol. I (Chapters 12-16), Vol. II (Chapters 3-5), Second edition, Wiley

Performance Record:
Written and oral examination

Workload:
90 hours of frontal lectures and exercises + 30 hours with the Teaching Assistant

Further Information:
http://www.mat.uniroma2.it/~pareschi/didattica/AA1314/LAG2014home.html

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