

ID

TM44_DIP_MAT

Teach Mob – Visiting Professors Academic year 2015/2016

2nd term
COURSE TITLE LIE GROUPS
Scientific area Geometry
Department of Mathematics “Giuseppe Peano”
Language used to teach ENGLISH
Course summary Lie Groups and Homogeneous spaces. Theorems of Lie and Engel about nilpotent and solvable Lie algebras. Semisimple Lie algebras. Criterion for semisimplicity. Levi’s semisimple decomposition of a general Lie algebra into its radical and a semisimple factor. Structure of complex classical groups: maximal torus, roots, adjoint representation, Weyl group. Highest weight theory for representations of semisimple Lie algebras.
Learning objectives This course aims to give an introduction to Lie groups and Lie algebras, representation theory and applications in geometry
Tutorship activities Office hours and marking of homework assignments.
Other activities besides the course: i.e. seminars and conferences addressed to PhD students and research fellows, dissemination conferences Research seminars for PhD students.

Visiting Professor Profile The Visiting professor should have interests and expertise in Differential Geometry and Lie Groups. The Visiting professor's CV should show a high international profile in research (publications in important scientific journals) and teaching (courses in prestigious universities of different countries).
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